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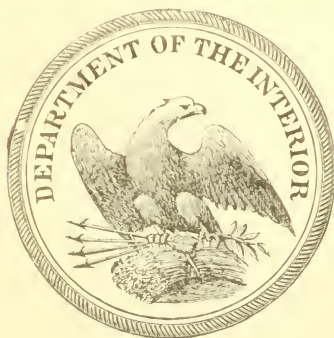
OF THE

UNITED STATES

GEOLOGICAL SURVEY

No. 185

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WASHINGTON

GOVERNMENT PRINTING OFFICE

1901

UNITED STATES GEOLOGICAL SURVEY

CHARLES D. WALCOTT, DIRECTOR

RESULTS

OF

SPIRIT LEVELING

FISCAL YEAR 1900-'01

BY

H. M. WILSON, J. H. RENSHAW, E. M. DOUGLAS, AND R. U. GOODE



WASHINGTON

GOVERNMENT PRINTING OFFICE

1901

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C., June 18, 1901.

SIR: We have the honor to transmit herewith, in form for publication, the results of the spirit leveling executed by the United States Geological Survey during the fiscal year 1900-1901.

These results were arranged for publication by Mr. D. H. Baldwin, assistant topographer.

Very respectfully,

H. M. WILSON,
Geographer in charge of Atlantic Section.

J. H. RENSHAWE,
Geographer in charge of Central Section.

E. M. DOUGLAS,
Geographer in charge of Rocky Mountain Section.

R. U. GOODE,
Geographer in charge of Pacific Section.

Hon. CHARLES D. WALCOTT,
Director of United States Geological Survey.



RESULTS OF SPIRIT LEVELING, FISCAL YEAR 1900-01.

By H. M. WILSON, J. H. RENSHAW, E. M. DOUGLAS, and R. U. GOODE.

INTRODUCTION.

During the field season careful spirit leveling was continued in connection with the regular topographic work on the same general plan followed in the four preceding seasons, as described in the appendix to the Eighteenth Annual Report of the Director, Pt. I, 1896-97, pages 225-235.

The practice of stamping an initial datum letter or name on the bench marks has been continued, and in cases where the datum has been changed on account of better determination of the reference to sea level, such changes are noted in the list of elevations which follows.

In the following list only those elevations are published which have been adjusted and checked in closed circuits. Much work has been done in addition to the list here published, especially in mountainous regions, which it is thought inadvisable to publish at this time on account of the many lines which are left unchecked at the end of the field season, and also on account of errors of closure in a few circuits in excess of the limiting error "E," allowed by the formula

$$E=0.05\sqrt{\text{distance in miles.}}$$

These lines in most cases will be rerun to bring them within the required limits.

The United States Coast and Geodetic Survey has made an elaborate general adjustment of a great net of precise leveling in the United States, by the method of "least squares," and the result and full description of this will be found in their Report for 1898-99, Appendix No. 8. This level net involves the results of leveling executed by the following organization, weighted as shown in the following extract from that appendix, and extends over the Atlantic and Central sections of topography in a belt of closed circuits from mean sea level in the Gulf of Mexico, near New Orleans, northward to the Great Lakes, and eastward to mean sea level in the Atlantic Ocean at Boston, Sandy

Hook, and Old Point Comfort. Mean Gulf level is considered to be the same elevation as mean sea level.

This adjusted precise-level net is considered to be the most reliable source of reference to mean sea level for the various local level lines which may touch upon it, until a sufficient number of additional precise level circuits are formed by future work to make necessary another general adjustment and a closer approximation to mean sea level.

No.	Lines.	Weight.
1	Engineers' lines with Kern instruments; Coast and Geodetic Survey of 1899; water leveling on lakes, except between Cape Vincent and Oswego	1,000
2	Wye levels run under the direction of the Engineers and Deep Waterways Commission, and the water levels between Cape Vincent and Oswego	\angle
		500
		\angle
3	Geological Survey and Van Orden levels	50
		\angle
4	Leveling by the Pennsylvania Railroad	38
		\angle
5	Coast and Geodetic Survey, previous to 1899	2,500
		\angle^2

ATLANTIC SECTION OF TOPOGRAPHY.

In this section, under the direction of Mr. H. M. Wilson, geographer in charge, spirit leveling was continued for the control of the regular topographic work executed during the year in various localities as listed below. In addition, leveling was carried on in the following localities during the year 1900; but as the field work in these localities is not yet completed, or corrections are pending, the results will not be published until later:

New York—Oneida, Lewis, Jefferson, Broome, Cortland, Chenango, Tioga, Tompkins, Madison, Steuben, Washington, Saratoga, and Fulton counties.

Pennsylvania—Chester County.

West Virginia—Wayne County.

Ohio—Lawrence County.

Kentucky—Greenup, Boyd, Carter, Lawrence, and Elliott counties.

North Carolina—Yancey, Madison, Buncombe, McDowell, Mitchell, Burke, Caldwell, Catawba, Lincoln, and Gaston counties.

South Carolina—York, Chester, Fairfield, and Richmond counties.

Tennessee—Davidson and Franklin counties.

Georgia—Whitfield, Murray, Gilmer, Fannin, Union, Towns, Habersham, White, and Lumpkin counties.

MAINE.

PENOBSCOT, WALDO, AND HANCOCK COUNTIES.

BUCKSPORT, BANGOR, AND ORONO QUADRANGLES.

The elevations published in the following list are based on an aluminum tablet placed in the post-office and custom-house building at Bangor, Me., the elevation of which is accepted as 23.725 feet above mean sea level. This elevation is derived from tidal observations on the Penobscot River at Bucksport, Me., during two lunar months, August and September, 1899, and one adjusted level circuit between Bucksport and Bangor, over which a closure error of 0.255 feet was distributed.

The leveling in the Bucksport quadrangle was executed in 1899 under the direction of Mr. E. B. Clark, topographer, by Messrs. Robert Coe and J. W. Edgerly, levelmen; in the Bangor quadrangle in 1900 under the direction of Mr. E. B. Clark, topographer, by J. W. Edgerly, levelman; and in the Orono quadrangle in 1900 under the direction of Mr. W. H. Lovell, topographer, by J. W. Edgerly, levelman.

All bench marks dependent on this datum are stamped with the letters "BANGOR" in addition to their figures of elevation.

BANGOR, VIA BUCKSPORT BRANCH MAINE CENTRAL RAILROAD, TO BUCKSPORT.

	Feet.
Brewer, between tracks south of Brewer Junction: railroad spike in first telegraph pole	37. 19
Brewer, 1 mile south of; east side of track, opposite milepost "Bucksport, 17 miles; Portland, 139 miles;" railroad spike in telegraph pole ..	29. 78
South Brewer, south of railroad station; on east side of track, railroad spike in first telegraph pole	28. 08
South Brewer, 1 mile south of; 12 feet west of track and 35 feet north of milepost "Bucksport, 15 miles; Portland, 141 miles." point of bed rock, chisel marked	58. 58
South Brewer, 2 miles south of; on east side of track, south of milepost "Bucksport, 14 miles; Portland, 142 miles," railroad spike in first telegraph pole	86. 27
North Orrington; nearest telephone pole to milepost "Bucksport, 13 miles; Portland, 143 miles," railroad spike in	120. 32
Orrington, 0.25 mile south of; on east side of track, nearest telegraph pole to milepost "Bucksport 12 miles; Portland 144 miles," railroad spike in	137. 15
Orrington, 1.25 miles south of; on east side of track, opposite milepost "Bucksport 11 miles; Portland 145 miles," railroad spike in telegraph pole	64. 04
South Orrington, 0.33 mile north of; nearest telephone pole to milepost "Bucksport 10 miles; Portland 146 miles," railroad spike in	40. 36
South Orrington, Methodist Church; foundation of, in middle of south face of third stone from southwest corner of, aluminum tablet, marked "61 BANGOR 1899"	61. 440

	Feet.
South Orrington, 0.66 mile south of; nearest telephone pole to milepost "Bucksport 9 miles; Portland 147 miles," railroad spike in	56.79
South Orrington, 1.66 miles south of; 10 feet east of track and 40 feet north of milepost "Bucksport 8 miles; Portland 148 miles," point of bed rock, chisel marked	47.78
North Bucksport, 0.33 mile north of; 12 feet west of milepost "Bucksport 7 miles; Portland 149 miles," highest point of gray bowlder	62.74
North Bucksport, 0.66 miles south of; 8 feet southwest of milepost "Bucksport 6 miles; Portland 150 miles," point of gray bowlder, chisel marked	103.38
Bucksport Center, 0.1 mile north of; nearest telephone pole to milepost "Bucksport 5 miles; Portland 151 miles," railroad spike in	97.14
Bucksport Center, 0.9 mile south of; 10 feet south of milepost "Bucksport 4 miles; Portland 152 miles," point of blue bowlder, chisel marked	115.15
Bucksport Center, 2 miles south of; 15 feet east of track and opposite milepost "Bucksport 3 miles; Portland 153 miles," point of ledge, chisel marked	123.21
Bucksport, 2 miles north of; on west side of track, south of milepost "Bucksport 2 miles; Portland 154 miles," railroad spike in first telephone pole	74.38
Bucksport, 1 mile north of; 12 feet east of track and 10 feet south of milepost "Bucksport 1 mile; Portland 155 miles," point of rock, chisel marked	61.83
Bucksport, Buck Memorial Library; on the lowest step of side wall on left side of the stone steps to, in front face of coping, aluminum tablet, marked "43 BANGOR 1899"	43.148

BUCKSPORT, VIA PROSPECT, TO NORTH SEARSPORT.

Prospect, 2.5 miles east of; on south side of road at fork of roads at Mrs. Mary Harriman's, 13 feet west of small white ash and 27 feet southwest of large birch across road, rock, chisel marked	229.73
Prospect, 1.5 miles east of; 220 feet west of residence of Geo. I. Westcotts, on south side of road, on nail in root of 14-inch white birch ..	281.87
Prospect, 0.75 mile east of; in front of R. Harriman's residence, on north side of road, gray bowlder, chisel marked	122.65
Prospect, 0.25 mile south of; residence of J. R. Killman, in south face of brick, second above foundation and third from the southwest corner of, aluminum tablet, marked "77 BANGOR 1899"	76.71
Prospect, 0.75 mile west of; at road fork near a bridge over brook, on south side of road, rock, chisel marked	55.05
Prospect, 1.75 miles west of; on north side of road, at fork of roads on hillside, point of gray bowlder, chisel marked	132.08
Prospect, 2.25 miles west of; 75 feet west of fork of roads, on south side of road, directly opposite house with brown trimmings, point of gray bowlder, chisel marked ..	163.60
Prospect, 3 miles west of; 80 feet east of "Four Corners" crossroads on Brown's Hill, on north side of road, large gray bowlder, chisel marked	318.68
North Searsport, 2.5 miles southeast of; 50 feet southwest of crossroads, signboards read, "Swanville, 4 miles; Prospect, 4 miles;" "Searsport, 5 miles; Frankfort, 5 miles; Belfast, 9 miles," on nail in root of 8-inch birch	300.43

	Feet.
North Searsport, on east side of road; 40 feet northeast of intersection with north and south road, signboards read, "Prospect, 5 miles; Bucksport, 9 miles," gray ledge, chisel marked	554.05
North Searsport, near fork of roads in; 20 feet southwest of signboards, "Frankfort, 7 miles; Belfast, 10 miles; Swanville, 3 miles," "Searsport, 7 miles; Monroe, 5 miles," in small, gray boulder, aluminum tablet, marked "393 BANGOR 1899"	392.663
NORTH SEARSPORT, VIA WEST WINTERPORT AND ELLINGWOOD, TO NORTH NEWBURG.	
North Searsport, 1 mile north of; 260 feet south of crossroads, on east side of road, on nail in root of 12-inch willow	239.62
North Searsport, 2 miles north of; 500 feet north of residence of Albin Kinney, on east side of road, boulder, chisel marked	349.38
North Searsport, 3 miles north of; on east side of road in woods, on gray boulder, chisel marked	236.82
West Winterport, 1.25 miles east of; 1,600 feet south of fork of roads where signboards read, "Frankfort, 3 miles; Swanville, 7 miles; Belfast, 13 miles," "Monroe, 4 miles," on east side of road, shelf of boulder, chisel marked	176.02
West Winterport, 0.25 mile east of; on south side of road, at fork of roads, 100 feet east of signboard, "Monroe, 3 miles," point of ledge, chisel marked	165.26
West Winterport, residence of J. W. Hobbs; in front face of top front doorstep to, aluminum tablet, marked, "162 BANGOR 1899"	161.650
West Winterport, 1 mile northeast of; 20 feet north of road, opposite small orchard, nail in 15-inch lone elm	160.40
West Winterport, 2.25 miles northeast of; at fork of roads 20 feet southwest of signboard "Marden's Mill 2.5 miles; Monroe 5 miles," boulder, chisel marked	179.01
Ellingwood, 2 miles south of; 0.25 mile south of residence of J. L. Carlton, on east side of road, boulder, chisel marked	181.04
Ellingwood, 0.75 mile south of; 80 feet south of crossroads at Woodman's schoolhouse, on east side of road, large smooth black boulder, chisel marked	218.03
Ellingwood, 0.25 mile north of; brick residence of Stephen L. Perkins, center of cap stone of cellar window at south end of, aluminum tablet, marked "387 BANGOR 1899"	386.814
Ellingwood, 1 mile north of; 150 feet north of residence of John Swan, on east side of road, round boulder, chisel marked	298.57
Nealley's Corner; 70 feet west of crossroads, nail in 36-inch elm tree	326.60
Nealley's Corner; 1 mile north of; 180 feet south of crossroads where signboards read "Carmel 8 miles; Winterport 7 miles," "Newburg 3 miles; Dixmont 7 miles," 20 feet east of road, nail in root of poplar	203.62
Nealley's Corner, 2 miles north of; on west side of road nearly opposite residence of H. D. Smith, nail in root of 15-inch elm	311.43
North Newburg, 1.5 miles southeast of; 70 feet northwest of crossroads and 100 feet north of signboards "North Newburg 2 miles; Winterport 9 miles," "Bangor 12 miles; Dixmont 9 miles," large boulder, chisel marked	196
North Newburg, 0.5 mile southeast of; on east side of road nearly opposite residence of Frank Page, ledge, chisel marked	143.82

	Feet.
North Newburg, at crossroads in: 90 feet west of signboards "Winterport 11 miles; Carmel 4 miles," "Bangor 11 miles; North Dixmont 9 miles," in ledge, aluminum tablet, marked "180 BANGOR 1899"....	180.389

NORTH NEWBURG, VIA HERMON CENTER, TO BANGOR.

North Newburg, 1 mile east of; 20 feet east of road, on knoll, 600 feet north of signboard "Hermon Pond 2 miles;" ledge, chisel marked....	167
Hermon Pond, 0.75 mile south of; on east side of road near birch grove, inside of fence, on nail in root of 30-inch red oak	174.16
Hermon Pond, station, 510 feet east of; steel bridge, on south end of top course of stone in west abutment of	151.01
Hermon Pond, 1 mile east of; milepost "Vanceboro 124 miles; Portland 127 miles," railroad spike in first telegraph pole east of	138.16
Hermon Pond, 2 miles east of; milepost "Vanceboro 123 miles; Portland 128 miles," railroad spike in nearest telegraph pole to	139.60
Hermon Center, 1 mile west of; milepost "Vanceboro 122 miles; Portland 129 miles," railroad spike in nearest telegraph pole to	129.91
Herman Center, milepost "Vanceboro 121 miles; Portland 130 miles," railroad spike in first telegraph pole east of	137.24
Hermon Center, 1 mile east of; milepost "Vanceboro 120 miles; Portland 131 miles," railroad spike in first telegraph pole east of	147.45
Hermon Center, 2 miles east of; milepost "Vanceboro 119 miles; Portland 132 miles," railroad spike in nearest telegraph pole to	141.54
Hermon Center, 3 miles east of; milepost "Vanceboro 118 miles; Portland 133 miles," railroad spike in first telegraph pole east of	143.09
Bangor, 3 miles west of; milepost "Vanceboro 117 miles, Portland 134 miles," railroad spike in nearest telegraph pole	103.57
Bangor, 2 miles west of; milepost "Vanceboro 116 miles, Portland 135 miles," railroad spike in first telegraph pole east of	75.29
Bangor, post-office and custom house; at south end of, about the middle of the first course of stone above the top landing of steps, aluminum tablet, marked "23 BANGOR 1899"	23.725
Bangor, store building at north corner of May street and water front; on east end of lowest step on May street side	20.53

HERMON CENTER, VIA HERMON CORNER AND SNOW CORNER, TO LEVANT.

Hermon Corner, 0.5 mile south of; east side of highway from Hermon Center to Hermon Corner, on point of ledge on, chisel marked	183.12
Hermon Corner, 0.5 mile northeast of; on west side of highway from Hermon Corner to Snow Corner, grey boulder, chisel marked	241.00
Snow Corner, 100 feet northeast of crossroads at; on south side of highway, in rear of post-office, nail in root of fir tree	168.90
Snow Corner, 1 mile north of; about 1,500 feet south of residence of Austin Holland, on east side of road, gray boulder, chisel marked ...	202.05
Snow Corner, 2 miles north of; about 0.2 mile south of residence of A.S. Fish, on east side of highway, grey boulder, chisel marked	205.73
Levant, 1.2 miles east of; about 0.2 mile south of junction of road with Union street, on east side of road, grey boulder, chisel marked	166.19

LEVANT, VIA KENDUSKEAG, TO SOUTH CORINTH.

Levant, post-office: west face of southeast corner stone of underpinning of, aluminum tablet, marked "143 BANGOR"	142.988
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	Feet.
Levant, 0.7 mile north of; about 300 feet south of residence of E. Henderson, on east side of highway, blue boulder, chisel marked	124.91
Levant, 1.7 miles north of; 800 feet north of residence of Chester Wells, in west side of road, point of ledge, chisel marked	177.10
Kenduskeag, 1 mile south of; about 1,000 feet north of residence of A. Craine, on west side of road, nail in root of 15-inch spruce tree	173.78
Kenduskeag, in village of; in front of residence of Dr. J. B. Benjamin, on east side of road, nail in root of 3-foot elm tree	137.05
Kenduskeag, 1.2 miles north of; signboard reads, "Bangor 13 miles, E. Corinth 6 miles," on east side of road 300 feet north of forks of road, nail in root of 8-inch elm tree	192.14
South Corinth, 1 mile south of; in cemetery, 30 feet north of southwest corner of, on east side of road, nail in spruce stump	224.95
South Corinth; on west side of road about 1,600 feet north of crossroads at post-office; in ledge, on Cushman Hill, bronze tablet, marked "296 BANGOR"	295.935

SOUTH CORINTH, VIA HUDSON, TO WEST OLDTOWN.

South Corinth, post-office; about 900 feet northeast of crossroads at, in pasture 50 feet south of road, blue boulder, chisel marked	279.99
South Corinth, 2 miles northeast of; sign reads "South Corinth, Kenduskeag," on north side of road, 560 feet west of fork with road to right, blue boulder, chisel marked	212.97
Hudson, 2 miles west of; sign reads "South Corinth, Kenduskeag, South Hudson," south of road at fork with road to right, grey boulder, chisel marked	271.67
Hudson, 1 mile west of; at the foot of "Sam. Miles's Hill" on south side of road, nail in root of pine tree about 15 inches in diameter	161.58
Hudson, about 900 feet south of Hudson House; on east side of road, large black boulder, chisel marked	161.96
Hudson, Baptist Church; in east face of underpinning on east side of, aluminum tablet, marked "151 BANGOR"	151.363
Hudson, 1 mile southeast of; near residence of Henry Southard, on north side of road, blue boulder, chisel marked	141.88
Hudson, 2 miles southeast of; 400 feet east of residence of Enoch Smith, in wall on south side of road, gray boulder, chisel marked	183.87
Hudson, 3 miles southeast of; about 1,800 feet west of fork with road to left, sign reads "Alton," on south side of road, gray boulder, chisel marked	136.38
West Oldtown, 2 miles northwest of; 80 feet south of road, in pasture of Scott Taylor, large gray boulder, chisel marked	131.46

WEST OLDTOWN TO OLDTOWN AND MILFORD.

West Oldtown, 1 mile west of; Pushaw Stream bridge, on south side of west approach to, stone, chisel marked	119.25
West Oldtown; 300 feet west of corner, 36 feet north of road, southeast face of large blue boulder, bronze tablet, marked "126 BANGOR" ..	125.678
West Oldtown, 3 miles east of; about 500 feet west of residence of George Seymour, on south side of road, nail in root of pine stump 2 feet in diameter	164.83
West Oldtown, 4 miles east of; on south side of road about 500 feet southeast of fork with road to left, nail in root of small juniper tree ..	153.16

	Feet.
Oldtown, 3 miles northwest of; in yard owned by Mr. Lancaster, 200 feet southeast of cross-roads, on north side of road, nail in root of pine tree about 1 foot in diameter.....	140.40
Oldtown, 2 miles northwest of; barn situated 80 feet north of road, 1,600 feet southeast of fork to right, stone under center of south end of, chisel marked.....	113.37
Milford, 2 miles east of; opposite home owned by Dr. Norcross, on north side of road, gray boulder, chisel marked.....	123.45
Milford, 7 miles east of; near highway bridge over Birch Stream on Milford-Greenfield road, 80 feet south of center of and 28 feet east of center of traveled way, in ledge, bronze tablet, marked "139 BANGOR".....	130.586

MILFORD, VIA PUBLIC ROAD TOWARD GREENFIELD.

Milford 0.5 mile east of; top of granite post on south side of road. Letters cut in post "B. W. P. Co., M. L. & L. Co., 1882".....	124.57
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OLDTOWN, VIA ORONO AND VEAZIE, TO BANGOR, ALONG PUBLIC ROAD AND MAINE CENTRAL RAILROAD.

Oldtown, St. James Episcopal Church corner Maine and Middle streets; east end of north face, aluminum tablet, marked "103 BANGOR".....	108.106
Oldtown, 1 mile south of; on east side of highway between railroad and river, large grey boulder, chisel marked.....	83.74
Oldtown, 2 miles south of; west of track and nearly opposite milepost "Portland 147 miles, Vanceboro 104 miles," small grey boulder chisel marked.....	78.47
Orono, 1 mile north of; 90 feet north of milepost "Portland 146 miles, Vanceboro 105 miles," in north end of top timber of culvert, railroad spike.....	85.31
Orono, west of station in third telegraph pole west of highway crossing, railroad spike.....	77.54
Orono, Wingate Hall, University of Maine; in west face of coping stone, aluminum tablet, marked "115 BANGOR".....	115.529
Orono, 1 mile south of; nearly opposite milepost "Portland 144 miles, Vanceboro 107 miles," railroad spike in telegraph pole.....	55.99
Orono, 2 miles south of; 60 feet north of milepost "Portland 143 miles, Vanceboro 103 miles," railroad spike in telegraph pole.....	59.06
Orono, 3 miles south of; 150 feet north of milepost "Portland 142 miles, Vanceboro 102 miles," railroad spike in telegraph pole.....	83.61
Veazie, station, highway bridge 100 feet north of; west of railroad and 30 feet south of milepost "Portland 141 miles, Vanceboro 110 miles," point on north pier.....	115.27
Veazie, 1 mile south of; 60 feet north of milepost "Portland 140 miles, Vanceboro 111 miles," railroad spike in telegraph pole.....	72.27

VEAZIE TO EAST EDDINGTON.

Eddington, 2 miles east of; 20 feet south of highway about 300 feet east of residence of Mr. Robins small grey boulder, chisel marked.....	246.25
East Eddington, 1.5 miles northwest of; nail in root of 7-inch cedar tree, standing in clump of cedar about 20 feet south of road.....	250.67
East Eddington, 0.5 mile northwest of; 330 feet southeast of fork with road to right where sign reads "Holden 1½ miles," on south side of road, red boulder.....	255.78

	Feet.
East Eddington, Universalist Church; in northwest corner stone of, bronze tablet, marked "193 BANGOR"	193.426

EAST EDDINGTON TO CLIFTON.

East Eddington, 1 mile east of; on north side of road about 400 feet west of forks of road to left, granite boulder, chisel-marked	160.07
East Eddington, 2 miles east of; 250 feet west of residence of Nelson McLaughlin, north side of road, on nail in root of 10-inch juniper tree	158.91
East Eddington, 3 miles east of; on north side of road on hill with Norway pine grove, boulder, chisel-marked	186.96
Clifton, Free Baptist Church; 9 feet east of southeast corner of, in ledge, 0.75-inch iron bolt	285.338

EAST EDDINGTON TO EAST HOLDEN.

East Eddington, 1 mile southwest of; (Holden road) west side of road, 300 feet south of residence, point on boulder	221.50
East Eddington, 3 miles southwest of; on west side of road, 500 feet south of fork with road to left, gray boulder	300.97
East Eddington, 4 miles southwest of; west side of road, 600 feet south of road to house on right, boulder, chisel-marked	320.42

EAST HOLDEN TO BREWER, ALONG RAILROAD.

East Holden, 0.5 mile north of; 30 feet north of milepost "Portland 147 miles; Bar Harbor 40 miles." 15 feet to left of track, on point of ledge, chisel-marked	236.95
East Holden, 1.5 miles north of; 12 feet south of milepost "Portland 146 miles; Bar Harbor 41 miles," 7 feet to right of east rail of track, on point of ledge, chisel-marked	243.14
East Holden, 2.5 miles north of; opposite milepost "Portland 145 miles; Bar Harbor 42 miles," 30 feet to right of track, on point of ledge, chisel-marked	176.09
East Holden, 1.5 miles northwest of; Holden, 2 miles east of: "Harts Corner," Holden "Town House," in east face of underpinning 11 feet south of entrance, aluminum tablet, marked "296 BANGOR"	298.210
East Holden, 3.5 miles northwest of; 60 feet north of milepost "Portland 144 miles; Bar Harbor 43 miles." 15 feet to left of track, on boulder, chisel-marked	139.65
East Holden, 4.5 miles northwest of; 130 feet south of milepost "Portland 143 miles; Bar Harbor 44 miles," 30 feet to right of track, on railroad spike in telegraph pole	131.90
East Holden, 5.5 miles northwest of; 30 feet south of milepost "Portland 142 miles; Bar Harbor 45 miles," 30 feet to right of track, railroad spike in telegraph pole	88.99
Brewer, 2.75 miles southeast of; 30 feet south of milepost "Portland 141 miles; Bar Harbor 46 miles," 30 feet to right of track, railroad spike in telegraph pole	125.25
Brewer, 1.75 miles southeast of; 60 feet north of milepost "Portland 140 miles; Bar Harbor 47 miles," 30 feet to right of track, railroad spike in telegraph pole	128.67
Brewer, 0.75 mile southeast of; 40 feet south of milepost "Portland 139 miles; Bar Harbor 48 miles," 30 feet to right of track, railroad spike in telegraph pole	92.10
Brewer Junction, south of; between tracks, railroad spike in first telegraph pole	37.19

NEW YORK.

ERRATA IN PREVIOUS REPORTS.

The following field and clerical errors occur in previous reports to this Bureau:

In the Appendix to the Twentieth Annual Report, page 354: Remsen, north end of retaining wall between lower milldam and Rome, Watertown and Ogdensburg Railroad; cross mark on bronze tablet set in end of coping near face corner, marked "1172." Published elevation to harmonize with adjacent elevations in the same list should read 1,171.045 feet.

In the Appendix to the Twenty-first Annual Report, page 392: Nehasane Lake, surface of water 1,714 feet, should read Lila Lake, surface of water 1,714 feet.

Appendix to same report, pages 404-405, line from Poughkeepsie to Newburg is in error 1 foot, and the elevations of these terminal points are corrected in this report. (See p. 40.) Also on pages 405-407, list of elevations Newburgh to Cornwall is found corrected in this report. (See p. 41.)

Page 401: Poughkeepsie; point in corner third step from top, south end, west abutment, cattle pass and bridge at Landis place, 1 mile west of Pleasant Valley. Published elevation to harmonize with adjacent elevations in the same list should read 232.18 feet.

Page 402: Hibernia; point on east side, south abutment, near end of truss bridge over creek. Published elevation to harmonize with adjacent elevations in same list should read 251.06 feet.

Page 402: South Millbrook, $\frac{1}{3}$ mile west of; point on rock north side of road, chisel mark "U. S." Published elevation to harmonize with adjacent elevations in same list should read 253.61 feet.

In addition to the above the following corrections, which are made necessary by the latest adjustment of the United States Coast and Geodetic Survey, are to be applied to figures given in the Appendix to the Twenty-first Annual Report:

	Corrections. Foot.
Page 383: List of elevations on precise line from Schenectady to North Creek	-0.136
Page 384: List of elevations dependent on above	-0.136
Pages 383-390: Elevation at North Creek	-0.136
Page 393: Elevation at Tupper Lake Junction, corrected by precise leveling from Deep Waterways bench mark at Fort Covington	+0.076
Page 390: Elevation at Utica, dependent on the United States Engineers' bench mark on Lock No. 36, at Little Falls	+0.241
Pages 401-494: Lists of elevations from Poughkeepsie, page 401, to Clinton Corners crossing, page 404, are readjusted, corrected, and republished herewith.	
Page 404: Elevation at Poughkeepsie	+0.030
Page 409: Elevation at Higginsville	+0.488

	Corrections. Foot.
Page 410: Elevation at Oswego.....	+0.765
(Note: List of elevations under this title take varying corrections between Oswego and Painted Post.)	
Page 431: Elevation at Addison.....	+0.113
Page 415: Elevation at Painted Post.....	+0.104
Page 437: Elevation at Corning.....	+0.100

FRANKLIN COUNTY.

PRECISE LEVELING.

The elevations published in the following list are based on a primary bench mark of the Deep Waterways Commission at Fort Covington, Franklin County, a 2-inch square cut on east abutment of the Grand Trunk Railroad bridge over Salmon River, 1 foot from the south edge and 1 foot from the east edge. The elevation of this is accepted as 166.355 feet above mean sea level. This elevation is derived by lowering that given by the Deep Waterways Commission for this bench mark 1.115 feet, this being the amount by which the elevation of a precise bench mark of that commission at Hogansburg, Franklin County, has been lowered, as published by the United States Coast and Geodetic Survey in its report for 1898-99, Appendix No. 8, page 543. This bench mark at Hogansburg is the center of a punch mark in a one-fourth-inch brass bolt cemented into the northeast face of the east buttress of the main tower of St. Patrick's Catholic Church, near mark U.S.P., and its elevation is accepted at 178.198 feet above mean sea level.

This precise line being based on Fort Covington and not adjusted for closure error at Tupper Lake Junction gives a new value for the bench mark at the latter place as here published 0.076 greater than the published elevation of same in the Twenty-first Annual Report of the Director of this Survey, page 393. This bench mark is an aluminum tablet set in foundation of water tank of the New York Central Railroad, Adirondack Division, stamped "1555 ALBANY."

The leveling was executed by Mr. C. H. Semper, levelman in charge, under the immediate supervision of Mr. H. M. Wilson, geographer.

All bench marks are referred to the gristmill bench mark at Albany, the elevation of which is accepted as 13.577 feet above mean sea level, and are stamped with the letters "ALBANY" in addition to their figures of elevation and year.

TUPPER LAKE JUNCTION, VIA MOIRA AND BOMBAY, TO FORT COVINGTON.

	Feet.
Tupper Lake Junction, New York Central Railroad, Adirondack Division; in foundation to water tank, aluminum tablet, marked "1555 ALBANY".....	1,555.933
Tupper Lake Junction, 2.8 miles north of; milepost "T. 5 & O. 123," top of rail at	1,604.6

	Feet.
Tupper Lake Junction, 3.8 miles north of; milepost "T. 6 & O. 122," top of rail at	1,606.6
Tupper Lake Junction, 4.8 miles north of; milepost "T. 7 & O. 121," top of rail at	1,534.8
Tupper Lake Junction, 5.8 miles north of; milepost "T. 7 & O. 120," top of rail at	1,523.6
Tupper Lake Junction, 6.8 miles north of; milepost "T. 9 & O. 119," top of rail at	1,515.6
Kildare, 350 feet north of station; in large boulder 8 feet east of rail, bronze tablet, marked "1528 ALBANY 1900"	1,527.776
Kildare, 0.6 mile north of; milepost "T. 10 & O. 118," top of rail at	1,525.1
Kildare, 1.6 miles north of; milepost "T. 11 & O. 117," top of rail at	1,563.7
Kildare, 2.6 miles north of; milepost "T. 12 & O. 116," top of rail at	1,575.3
Kildare, 3.6 miles north of; milepost "T. 13 & O. 115," top of rail at	1,556.8
Blue Pond, station; top of rail in front of	1,552.6
Blue Pond, 0.8 mile north of; milepost "T. 14 & O. 114," top of rail at	1,547.5
Blue Pond, 1.8 miles north of; milepost "T. 15 & O. 113," top of rail at	1,558.4
Blue Pond, 2.8 miles north of; milepost "T. 16 & O. 112," top of rail at	1,559.2
Blue Pond, 3.8 miles north of; milepost "T. 17 & O. 111," top of rail at	1,561.9
Blue Pond, 4.8 miles north of; milepost "T. 18 & O. 110," top of rail at	1,549.3
Blue Pond, 5 miles north of; 1,300 feet north of milepost "T. 18 & O. 110," in large boulder 10 feet west of track, bronze tablet marked "1551 ALBANY 1900"	1,551.161
Bay Pond; milepost "T. 19 & O. 109," top of rail at	1,569.3
Bay Pond, 1 mile north of; milepost "T. 20 & O. 108," top of rail at	1,581.2
Bay Pond, 2 miles north of; milepost "T. 21 & O. 107," top of rail at	1,615.6
Brandon; milepost "T. 22 & O. 106," top of rail at	1,601.2
Brandon, station; top of rail in front of	1,603.3
Brandon, 0.7 mile north of; milepost "T. 23 & O. 105," top of rail at	1,575.9
Brandon, 1 mile north of; 0.4 mile north of milepost "T. 23 & O. 105," in large boulder 10 feet west of track, bronze tablet, marked "1595 ALBANY 1900"	1,594.031
Brandon, 1.7 miles north of; milepost "T. 24 & O. 104," top of rail at	1,612.6
Brandon, 2.7 miles north of; milepost "T. 25 & O. 103," top of rail at	1,622.3
Brandon, 3.7 miles north of; milepost "T. 26 & O. 102," top of rail at	1,393.8
Madawasha, 0.3 mile north of; milepost "T. 27 & O. 101," top of rail at	1,590.5
Madawasha, 1.3 miles north of; milepost "T. 28 & O. 100," top of rail at	1,598.8
Leboeuf; milepost "T. 29 & O. 99," top of rail at	1,587.4
Leboeuf, 0.3 mile north of; 125 feet north of section post 14-15, and 50 feet east of railroad, in large rock, bronze tablet, marked "1556 ALBANY 1900"	1,555.592
Leboeuf, 1 mile north of; milepost "T. 30 & O. 98," top of rail at	1,521.3
Leboeuf, 2 miles north of; milepost "T. 31 & O. 97," top of rail at	1,490.4
Leboeuf, 3 miles north of; milepost "T. 32 & O. 96," top of rail at	1,371.8
Spring Cove, station; top of rail in front of	1,342.5
Spring Cove, 0.7 mile north of; milepost "T. 33 & O. 99," top of rail at	1,335.9
Spring Cove, 1.7 miles north of; milepost "T. 34 & O. 94," top of rail at	1,333.9
Spring Cove, 2.7 miles north of; milepost "T. 35 & O. 92," top of rail at	1,338.0
Spring Cove, 3.7 miles north of; milepost "T. 36 & O. 92," top of rail at	1,337.3
Santa Clara, station; top of rail in front of	1,337.3
Santa Clara, 0.5 mile north of; milepost "T. 37 & O. 91," top of rail at	1,312.2
Santa Clara, 0.7 mile north of; 750 feet north of milepost "T. 37 & O. 91," in large rock 10 feet east of railroad, bronze tablet, marked "1306 ALBANY 1900"	1,305.988

	Feet.
Santa Clara, 1.5 miles north of; milepost "T. 38 & O. 90," top of rail at	1,252.5
Santa Clara, 2.5 miles north of; milepost "T. 39 & O. 89," top of rail at	1,250.9
Santa Clara, 3.5 miles north of; milepost "T. 40 & O. 88," top of rail at	1,250.7
Santa Clara, 4.5 miles north of; milepost "T. 41 & O. 87," top of rail at	1,246.6
Santa Clara, 5.5 miles north of; milepost "T. 42 & O. 86," top of rail at	1,247.9
St. Regis Falls, 1,000 feet south of station; in large rock 20 feet west of railroad and 300 feet north of railroad water tank, aluminum tablet, marked "1256 ALBANY 1900"	1,256.399
St. Regis Falls, station; top of rail in front of	1,255.2
St. Regis Falls, 0.4 mile north of; milepost "T. 43 & O. 85," top of rail at	1,241.5
St. Regis Falls, 1.4 miles north of; milepost "T. 44 & O. 84," top of rail at	1,185.8
St. Regis Falls, 1.5 miles north of; top of rail at railroad crossing	1,165.7
St. Regis Falls, 2.4 miles north of; milepost "T. 45 & O. 83," top of rail at	1,069.4
Dickinson Center, milepost "T. 46 & O. 82," top of rail at	959.4
Dickinson Center, station; top of rail in front of	954.4
Dickinson Center, 0.5 mile north of; top of rail at railroad crossing	888.4
Dickinson Center, 0.9 mile north of; milepost "T. 47 & O. 81," top of rail at	852.4
Dickinson Center, 1.7 miles north of; Stone's crossing, top of rail at	765.1
Dickinson Center, 1.9 miles north of; milepost "T. 48 & O. 80," top of rail at	750.9
Dickinson Center, 2.5 miles north of; top of rail at railroad crossing	690.7
Dickinson Center, 2.9 miles north of; milepost "T. 49 & O. 79," top of rail at	660.1
Dickinson Center, 3.2 miles north of; top of rail at railroad crossing	629.9
Dickinson Center, 3.6 miles north of; on east side of railroad at culvert No. 18, 25 feet east of rail, 5 feet north of creek, in large rock, aluminum tablet, marked "603 ALBANY 1900"	602.544
Dickinson Center, 3.9 miles north of; milepost "T. 50 & O. 78," top of rail at	584.6
Dickinson Center, 4.8 miles north of; top of rail at railroad crossing	483
Dickinson Center, 4.9 miles north of; milepost "T. 51 & O. 77," top of rail at	476.3
Dickinson Center, 5.9 miles north of; milepost "T. 52 & O. 76," top of rail at	452.7
Dickinson Center, 6.3 miles north of; top of rail at railroad crossing	434.8
Dickinson Center, 6.9 miles north of; milepost "T. 53 & O. 75," top of rail at	412.5
Moirs, Methodist Episcopal Church: in east face of, aluminum tablet, marked "420 ALBANY 1900"	419.352
Bombay, public school on Main street; in northwest face of, bronze tablet, marked "193 ALBANY 1900"	193.046
Bombay; milepost 80 on Grand Trunk Railroad, top of rail at	188
Bombay, 0.5 mile north of; railroad crossing, top of rail at	188
Bombay, 2 miles north of; milepost 78, top of rail at	180.3
Bombay, 3 miles north of; milepost 77, top of rail at	179.1
Bombay, 4 miles north of; milepost 76, top of rail at	176.1
Bombay, 4.3 miles north of; top of rail at railroad crossing	176.7
Fort Covington (deep waterway primary bench mark), Grand Trunk Railroad bridge over Salmon River; 2 inches square, 1 foot from south edge and 1 foot from east edge of east abutment of	166.355
Fort Covington, Grand Trunk Railroad bridge over Salmon River: 600 feet west of station: top of south end of east abutment, bronze tablet, marked "167 ALBANY 1900"	166.354

WASHINGTON AND SARATOGA COUNTIES.

SCHUYLERVILLE QUADRANGLE.

The elevations published in the following list are based on an aluminum tablet, set in stone of pilaster at left side of the front entrance of the high school building at Fort Edward, N. Y., and marked "145 A." This bench mark was touched upon by the Deep Waterways Commission—wye and water leveling between the gristmill bench mark near Albany and permanent bench mark; "P" of their precise line at St. Patrick's Catholic Church, Hogansburg, via Lake Champlain; and the elevation is derived by the adjustment of this line to the corrected elevations of these bench marks as determined by the latest adjustment of the United States Coast and Geodetic Survey, in 1900, and published in report of that bureau for 1898-99, Appendix No. 8, and is accepted as 144.386 feet above mean sea level. The leveling was originally based upon bench marks established by the Hudson River and Lake Champlain Canal, and as a result the markings are generally 1 foot too high.

The leveling was executed under the general direction of Mr. W. H. Lovell, topographer, by Mr. Clark Brown, levelman, in 1898.

All bench marks are referred to the Gristmill bench mark near Albany and are stamped by the letter "A" in addition to their figures of elevation.

SCHUYLERVILLE, VIA BURGOYNE AND STAFFORD, TO SARATOGA.

	Feet.
Schuylerville, Ferry street; top of rail	177
Schuylerville; top of rail at station	174.8
Schuylerville, corner College and Green streets, school building; under second window from west corner, bronze tablet, marked "216 A".....	214.991
Victoria Mills; top of rail at station	192.5
Victoria Mills Pond, water surface	187
Victoria Mills, southwest corner Gates avenue and Pine street, hotel; southeast corner of foundation, projecting stone, chiseled mark	200.48
Victoria Mills, 1.5 miles west of; 200 feet west of overhead road crossing, oak tree 3 feet in diameter, notch on root of	210.50
Gates, top of rail at station	234
Burgoyne, bridge over Saratoga Lake outlet; north abutment, east face corner, coping, chiseled mark □	210.58
Burgoyne, road crossing at station; top of rail	217
Stafford, top of rail at station	209.7
Schuyler Junction, 1.5 miles west of, double span bridge; center pier, southwest corner, coping, chiseled mark □	224.97
Saratoga, 1.5 miles east of, 15-foot span bridge; east abutment south wing, face corner, coping	228.41
Saratoga, Fitchburg Railroad crossing at East avenue; open culvert, east abutment south end, face corner, coping, chiseled mark □	261.96
Saratoga, Delaware and Hudson Railroad bridge over East avenue; south abutment east end, parapet, face corner, chiseled mark □	304.65

SARATOGA, ALONG FITCHBURG AND DELAWARE AND HUDSON RAIL-
ROADS, VIA GANSEVOORT, TO FORT EDWARD.

	Feet.
Saratoga, 3 miles north of, 500 feet north of road crossing; 50 feet west of track, apple tree, 2 feet diameter, notch on root of	311.03
Saratoga, 5.5 miles northeast of, South Wilton church; south side near front, in foundation, bronze tablet, marked "327 A"	326.016
South Wilton church, 0.5 mile north of; at railroad crossing	322
South Wilton church, 0.75 mile north of; at railroad crossing	322
Gansevoort, 3.75 miles south of; railroad bridge over road, outside anchor, bolt in southeast wall plate	308.71
Gansevoort, 2.5 miles south of, 500 feet north of crossing; culvert, east parapet, northeast corner of coping	292.23
Gansevoort, Empire House Hotel; south side near front, in brickwork, bronze tablet, marked "246 A"	245.031
Gansevoort, 2.75 miles north of, road crossing; southeast corner, elm tree, 8 inches diameter, notch in root of	162.33
Fort Edward, west railroad bridge over Hudson River; north end east abutment, face corner, parapet, chiseled mark	147.63

SCHUYLerville TO CHAMPLAIN CANAL BRIDGE No. 56,

Schuylerville, Ferry street canal bridge; towpath abutment, north wing, face corner, second step from bottom, being canal bench mark No. 42, chiseled mark ⊕	105.75
Schuylerville, 2 miles south of, canal bridge No. 56; towpath abutment north wing, face corner, being canal bench mark No. 41, chiseled mark ⊕	106.99

SCHUYLerville, VIA BALD MOUNTAIN, MIDDLEFALLS, AND EASTON
CORNERS, TO SARLES FERRY.

Schuylerville, Champlain Canal, water surface	101
Schuylerville, 1.5 miles north of, canal bridge No. 63; towpath abutment, south end, lower step, face corner, being canal bench mark No. 45, chiseled mark ⊕	107.21
Schuylerville, 1.75 miles north of, lock No. 10; coping, southeast anchor, being canal bench mark No. 46, chiseled mark ⊕	108.90
Schuylerville, 2 miles north of, bridge over Hudson River; floor of	103
Bald Mountain, schoolhouse grounds; largest tree on north side, pine tree, notch on root of	316.11
Middlefalls, covered bridge; floor of	306
Middlefalls, above dam; water surface	292
Middlefalls, below falls; water surface	243
Middlefalls; south bank of creek, 75 feet west of covered bridge, southeast corner of brick gristmill, bronze tablet, marked "303 A"	302.611
Middlefalls, 1.25 miles south of; 20 feet south of schoolhouse, maple tree, 10 inches diameter, notch on root of	358.08
Middlefalls, 3.25 miles south of; opposite road to west, 10 feet east of road, boulder 6 feet broad, chiseled mark □	408.48
Easton Corners, 2 miles north of, schoolhouse; center of doorsill	328.74
North Easton (Easton Corners), 0.1 mile north of; 10-foot arch culvert, southwest wing, first stone back of arch on level with base, bronze tablet, marked "332 A"	331.553
North Easton (Easton Corners), 1.7 miles west of; 75 feet east of cross-roads, elm tree, 18 inches diameter, notch on root of	123.15
Sarles Ferry, Hudson River; water surface	83

SARLES FERRY, VIA QUAKER SPRINGS, TO STAFFORD.

	Feet.
Sarles Ferry, opposite to, on Champlain Canal: waste weir No. 7, north wing, southeast corner of coping, marked with red paint ⊕ canal bench mark No. 37	103.02
Sarles Ferry, 0.8 mile west of, 150 feet west of house; near north road fence, oak tree, 2.5 feet diameter, notch on root of	199.92
Quaker Springs, 1.5 miles east of, 100 feet west of road corner; north of road, pine tree, 2.5 feet diameter, notch on root of	255.41
Quaker Springs, 600 feet west of crossroads; north side of road, in outcrop, bronze tablet, marked "321 A"	320.078
Quaker Springs, 1 mile west of; near house north of road, outcrop 3 feet north of road, chiseled mark □	359.80
Deans Corners, 100 feet east of north and south roads; near north road fence, elm tree, 3 feet diameter, notch on root of	375.98
Staffords Bridge, 1.5 miles south of, 300 feet south of house; 20 feet south of locust tree, west of road, elm tree, notch on root of	356.35
Staffords Bridge: north abutment, east end, back corner of coping, chiseled mark □	203.22

BALD MOUNTAIN, VIA DURKEETOWN, TO FORT EDWARD.

Bald Mountain, 1.75 miles north of, 400 feet east of crossroads; near north road fence, oak tree, 3 feet diameter, notch on root of	299.14
Bald Mountain, 4 miles north of: 50 feet north of white house west of road and 15 feet west of road, bowlder 2 feet broad, chiseled mark ○	301.85
Bald Mountain, 6.67 miles north of, corner of road to Durkeetown; 50 feet west of Argyle road, south side of east and west road, elm tree, notch on root of	320.60
Argyle, 0.5 mile north of road to; 0.25 mile north of road to west, 100 feet south of abandoned house, 40 feet west of road, bowlder, chiseled mark □	351.39
Durkeetown church; south side, 10 feet from rear corner, in stone foundation, bronze tablet, marked "171 A"	163.778
Durkeetown, 1.5 miles west of; schoolhouse, southwest corner of foundation, projecting stone	132.26
Fort Edward, Argyle street canal bridge; north wing, east abutment, second step, face corner, being a canal bench mark, chiseled mark ⊕	141.41
Fort Edward, lock No. 15; southeast anchor, being canal bench mark 79, chiseled mark ⊕	148.36
Fort Edward, high school building; front entrance, in stone pilaster at left side, bronze tablet, marked "145 A"	144.386

SCHOHARIE, ALBANY, AND SCHENECTADY COUNTIES.

BERNE QUADRANGLE.

The elevations published in the following list are based on a bronze tablet set on the north end of east abutment of bridge at Duanesburg, marked "681 ALBANY 1898." The elevation of this bench mark is derived by precise leveling of the United States Geological Survey and, as corrected by the latest adjustment of the United States Coast and Geodetic Survey, is accepted as 680.246 feet above mean sea level. (See United States Coast Survey Report for 1898-99, Appendix 8, p. 543.)

The leveling was executed in the field season of 1899 under the direction of Mr. A. W. Walker, topographer, by Mr. Seth Van Loan, levelman, and in 1900 under the direction of Mr. Glenn S. Smith, topographer, by Mr. J. W. Hodges, levelman.

All bench marks are referred to the Gristmill bench mark at Albany, N. Y., the elevation of which is accepted as 13.577 feet above mean sea level, and are marked with the letters "ALBANY" in addition to their figures of elevation.

DUANESBURG, ALONG DELAWARE AND HUDSON RAILROAD, TO DELANSON.

	Feet.
Duanesburg, 1,000 feet west of Delaware and Hudson station; bridge, on north end of east abutment of, bronze tablet, marked "681 ALBANY 1898"	680.246
Duanesburg, 1.75 miles west of; south side of track, on head of spike in stump	780.15
Delanson, 0.75 mile east of; railroad bridge, on top of south end of west abutment of	802.46
Delanson, station; railroad track in front of	812

DELANSON, VIA QUAKER STREET AND GALLUPVILLE, TO WEST BERNE.

Quaker street, northwest corner of road intersection: point on curb at	1,025.49
Quaker street, 1.5 miles west of: on north edge of road, stone, marked ⊙	1,186.58
Quaker street, 3 miles south of, at road intersection known as "Frinks Corners," on rock, marked "⊙ U.S."	1,353.76
Gallupville, 2.5 miles north of; 50 feet south of schoolhouse, on stone, marked "⊙ U.S."	1,174.88
Gallupville, 1 mile north of; at road intersection northwest of bridge over creek, point on stone	874
Gallupville, at turn in road, Schoharie road intersection; nail in root of hickory tree at	720.80
Gallupville, at West Berne road intersection; point on stone	790.61
Gallupville, Dutch Church: set in wall near southeast corner, bronze tablet, marked "831 ALBANY"	830.734
West Berne, 1.75 miles northwest of; near schoolhouse and road intersection, point on stone	857.53
West Berne, at intersection with road which crosses creek; on stone, marked ⊙	936.23

EAST BERNE, VIA BERNE, TO WEST BERNE.

East Berne, 1 mile west of; north side of road, opposite house, on stone, marked "⊙ U.S."	1,156.13
Berne, 1 mile east of; 200 feet west of brook, north of road, point on stone	1,034.06
Berne, road intersection at bridge: point on boulder	1,005.59
Berne, Lutheran Church; in southeast corner, bronze tablet, marked "1015 ALBANY"	1,014.410
West Berne, 1 mile east of; at four corners, point on large stone	953.50

BERNE, VIA SOUTH BERNE AND WESTERLO, TO EAST BERNE.

Berne, 0.5 mile west of; southwest corner of road intersection, point on ledge rock, marked "⊙ U.S."	988.71
Berne, 3.5 miles south of; south of road, nail in apple tree	1,030.98

	Feet.
Berne, 6.2 miles south of; 0.7 mile north of South Berne, opposite house on south of road, rock	1,208.49
South Berne, opposite post-office; in triangle at forks of road, point on millstone	1,269.45
South Berne, 0.4 mile south of; on west side of road, on flat rock, marked "⊕ B.M."	1,550.96
South Berne, 1.7 miles south of; south of road, on rock, marked "⊙ B.M."	1,507.67
Rensselaerville, 3 miles east of; 1,200 feet east of road intersection, north side of road, point on embedded boulder, marked "⊙ U.S."	1,448.10
Westerlo, 2.25 miles west of, at Van Leuven's Corners; southwest corner of old tavern, point on stone	1,330.19
Westerlo, bridge over creek; in top of south end of east abutment, bronze tablet, marked "1144 ALBANY"	1,143.518
Westerlo, A. S. Greene's store; corner of street at, point on embedded stone	1,166.69
Westerlo, 0.67 mile north of; on west side of road, point on stone	1,190.38
Westerlo, 0.75 mile north of; east side of road, point on boulder, marked "⊙ U.S."	1,279.53
Westerlo, 2 miles north of; west side of road, point on stone, marked "⊙ U.S."	1,356.97
Westerlo, 2.5 miles north of; 1,000 feet north of road intersection, west edge of road, point on stone, marked "⊙ U.S."	1,425
Reidville, 0.75 mile south of; at road intersection, point on stone	1,419.01
East Berne, 3 miles south of, 350 feet south of schoolhouse south side of road, point on stone	1,439.51
East Berne, 2 miles south of; west side of road, near top of long hill, point on stone, marked "⊙"	1,502.35
East Berne, 1.5 miles south of; in triangle at road intersection at foot of long hill, point on large stone	1,250.79
East Berne, 0.5 mile south of; east side of road, point on stone, marked "⊙"	1,192.50
East Berne, west entrance to village, 300 feet east of Berne road intersection; in embedded stone at bend in road, bronze tablet, marked "1174 ALBANY"	1,173.734
East Berne, southeast corner of road intersection leading to Berne; point on stone, marked "⊙ 1197"	1,188.55

EAST BERNE TO ALTAMONT.

East Berne, 1 mile north of; at northwest corner of road intersection, point on stone	1,228.13
Altamont, 4 miles south of; 1,000 feet north of fork with Thompsons Lake road, east side of road, point on embedded stone, marked "⊙ U.S. 1338"	1,330.24
Altamont, 3.25 miles south of; 1,500 feet north of Pitcher's road intersection, east side of road, point on stone	1,346.69
Altamont, 2.75 miles south of; 800 feet south of Indian Ladder road intersection, west side of road, rock, marked "⊙"	1,411.24
Altamont, 1.5 miles south of; northeast corner of road intersection, point on stone, marked "⊙ U. S. 1089"	1,080.73
Altamont, 0.12 mile south of; east end of sluice under road, point on stone, marked "⊙"	720.36
Altamont, Altamont Hotel; in foundation wall southwest side of, bronze tablet, marked "464 ALBANY"	464.204

ALTAMONT, ALONG DELAWARE AND HUDSON RAILROAD, TO DELANSON.

	Feet.
Altamont, $\frac{1}{8}$ mile west of; north end of east abutment of bridge, point on top marked "⊙"	484.26
Altamont, 2.25 miles west of; 1,500 feet west of crossing, north side of track, point on large stone	603.15
Quarry, track at. east frog	670
Knox, 0.25 mile west of; small culvert, point on northwest corner of, marked "⊙"	703.07
Knox, 1.5 miles west of; 0.5 mile west of 21 milepost, small culvert, point on south end	758.46
Knox, 1.75 miles west of; 900 feet west of road crossing, small culvert, point on north end of, marked "⊙"	771.28
Duane, 1 mile east of; south side of track, point on stone	775.71
Duane, 900 feet east of; bridge, south end of east abutment of, point on top	894.36
Duane, 0.75 mile west of; south side of track, point on stone, marked "⊙"	804.10
Delanson, 0.75 mile east of; bridge, on top of south end of west abutment of	802.46

SCHOHARIE, DELAWARE, GREENE, AND ULSTER COUNTIES.

RHINEBECK, ROSENDALE, PHENICIA, AND GILBOA QUADRANGLES.

The elevations published in the following lists are based on and adjusted between two bench marks. One is an aluminum tablet set in the front face of the city hall in Poughkeepsie, N. Y., stamped "173 ALBANY 1899," the elevation of which is accepted as 172.613 feet above mean sea level, and the other a bronze tablet at the northwest corner of the stone foundation of Union schoolhouse at Cobleskill, N. Y., stamped "930 A," the elevation of which is accepted as 926.865 feet above mean sea level. The elevation of the Poughkeepsie bench mark depends directly upon that of a precise bench mark of the United States Coast and Geodetic Survey at the west abutment of the Poughkeepsie bridge, and the elevation of the Cobleskill bench mark, a precise bench mark of this survey, is taken as corrected by the United States Coast and Geodetic Survey. (See Report for 1898-99, Appendix No. 8, p. 543).

The leveling was executed under the direction of Mr. C. C. Bassett, topographer, by Messrs. George Baily and W. S. D. Moore, levelmen.

All bench marks are referred to the Gristmill bench mark near Albany, the elevation of which is accepted as 13.577 feet above mean sea level, and are marked by the letters "ALBANY" in addition to their figures of elevation.

POUGHKEEPSIE BRIDGE, ALONG WEST SHORE RAILROAD, TO KINGSTON.

	Feet.
Poughkeepsie bridge; west abutment, southwest corner top stone, chisel marked	224.93
Highland; intersection of Highland and Lewisburg roads, bridge, on northeast base block of, bent bolt head	125.73
Highland; opposite West Shore Railroad station, top of west rail	9.8

	Feet.
Highland, 250 feet north of station; rock, chisel marked	10.54
Highland, 0.7 mile north of; on west end of culvert, chisel marked	9.67
Highland, 2 miles north of; open culvert, on east end of south wall of, chisel marked	8.50
Milepost 75-352, 12 feet south of; on west of track, stone at base of cliff, chisel marked	14.48
Mahoney's cross-over; on west side of track opposite west switch block, rock, chisel marked	46.99
College Point, at "Watchman's Box;" 180 feet north of, culvert on east end of north wall, chisel marked	64.98
West Park, 0.5 mile south of; at crossing top of west rail of west track	97.2
West Park, West Shore Railway station; in north wall at northwest corner, bronze tablet, marked "113 ALBANY"	113.380
West Park, 1 mile north of; at Black Creek bridge, south abutment, on top stone at east end, chisel marked	114.53
Esopus, 0.2 mile south of; 250 feet north of milepost "N. Y. 80," on west side of track, rock, chisel marked	116.68
Esopus; at crossing, top of rail	116.8
Esopus, 0.7 mile north of; bridge, south abutment, on east end, chisel marked	121.67
Ulster Park, 0.2 mile south of; at crossing, top of rail	131.3
Ulster Park, 300 feet south of station: at crossing, top of rail	149.2
Ulster Park, 1 mile north of; in southwest angle of crossing, boulder, chisel marked	172.12
Port Ewen, 1 mile south of; at culvert on northeast corner of coping, chisel marked	151.56
Port Ewen, 500 feet south of station; at crossing, top of each rail	159
Port Ewen, 500 feet north of station; on west side of track, rock, chisel marked	159.13
Wallkill River bridge; north abutment, on southeast corner of, chisel marked	156.48
Kingston; on foundation stone of water tank, chisel marked	181.58

KINGSTON, ALONG ULSTER AND DELAWARE RAILROAD, TO PHENICIA.

Kingston, city hall; in center of face wall of front portico, aluminum tablet, marked "223 ALBANY"	223.206
Bridge No. 6, Ulster and Delaware Railroad; east abutment, north end, on top of stone, chisel marked	155.38
Kingston Creek Bridge; west abutment, on north end of, chisel marked	164.43
Kingston, 3 miles west of; 250 feet west of overhead bridge, on south side of track, rock, chisel marked	184.85
Stony Hollow, 1.5 miles east of; on south side of road, boulder, chisel marked	296.89
Stony Hollow, 600 feet east of station; near east end of cut on north side of track, rock, chisel marked	414.74
Stony Hollow, 0.25 mile north of; on bridge No. 12, east abutment, south end, top stone, chisel marked	458.73
West Hurley, 0.5 mile east of railroad station; 100 feet northwest of railroad crossing on south side of highway, bronze tablet set in face of rock, marked "546 ALBANY"	545.683
West Hurley, opposite station; top of rail	530.4

	Feet.
West Hurley, 0.7 mile west of; top stone of culvert, cross cut on south-east corner of	531.82
West Hurley, 1 mile west of; at crossing, top of rail	546.3
Olive Branch, at station; top of rail	514.5
Olive Branch, 400 feet west of station; bridge No. 17, west abutment, north end of, top stone, chisel marked	511.56
Olive Branch, 1 mile west of; bridge, south abutment, top stone, chisel marked	504.49
Olive Branch, 1.5 miles west of; bridge No. 19, west abutment, south end, top stone, chisel marked	506.69
Olive Branch, 2.5 miles west of; bridge No. 20, east abutment, south end, top stone, chisel marked	505.68
Browns station, 1,000 feet west of; at crossing, in northeast angle, rock, chisel marked	530.09
Browns station; 1 mile west of; 380 feet west of crossing on north side of track, rock, chisel marked	532
Brodheads bridge: east abutment, north end, chisel marked	501.49
Brodheads bridge: top of rail at crossing	502.7
Shokan, 0.2 mile east of station; bridge No. 22, west abutment, north end of, on bed plate, bronze tablet, marked "532 ALBANY"	532.615
Bridge No. 25; south abutment, west end, top stone, chisel marked	552.19
Boiceville, 1,000 feet south of, Esopus Creek bridge; north abutment, on southwest wall, chisel marked	596.24
Boiceville, opposite station; top of rail	609.4
Boiceville, 1 mile north of; south end of culvert, top stone, chisel marked	636.99
Cold Brook; highway bridge, south end of, top of south bolt on base of railing	645.53
Mount Pleasant, 0.5 mile east of; on west side of track, boulder, chisel marked	694.64
Mount Pleasant, opposite station; top of rail	713.1
Mount Pleasant, 0.7 mile north of; east end of culvert, top stone, chisel marked	737.66
Phoenicia, 1.5 miles south of; at open culvert, top stone west end, north wall, chisel marked	753.99
Phoenicia, opposite station; top of east rail	795.4
Phoenicia, Ulster and Delaware Railroad bridge; south pier, top of east end of, aluminum tablet, marked "804 ALBANY"	804.329

PHOENICIA TO SHANDAKEN.

Phoenicia, 1 mile north of; railroad bridge, at east end of, on abutment wall, northeast side of track, chisel marked	854.01
Allaben station, 1,000 feet west of; south side of track, on small culvert, chisel marked	995.16
Shandaken, steel bridge at forks of road; top of southwest wing wall of, bronze tablet, marked "ALBANY 1071"	1,070.559

SHANDAKEN, VIA BIG INDIAN AND OLIVEREA, TO SLIDE MOUNTAIN POST-OFFICE.

Shandaken, 1.6 miles west of; on small culvert, southwest corner of, chisel marked	1,166
Big Indian; 150 feet west of railroad crossing, northwest side of highway rock, chisel marked	1,217.29

	Feet.
Oliverea, 50 feet north of post-office; on east side of road, rock, chisel marked	1,407.77
Slide Mountain post-office; rock at northwest corner of, bronze tablet, marked "ALBANY 1665"	1,664.228

SHANDAKEN TO LEXINGTON.

Shandaken, 1.7 miles north of; at intersection with road to left, on retaining wall, chisel marked	1,324.79
Westkill, 1.3 miles south of; top of Deep Notch, west side of road, on boulder stone, aluminum tablet, marked "ALBANY 1901"	1,900.254
Westkill, small steel bridge on south side of road, east sill of, chisel marked	1,463.67
Westkill, 2 miles north of; iron bridge, on northwest wing wall of, chisel marked	1,380.22
Lexington, 1 mile west of; iron bridge, on southeast wing wall of, chisel marked	1,320.41

PHOENICIA, VIA HUNTER AND LEXINGTON, TO PRATTSVILLE.

Phœnicia; Broadway railroad crossing	812.9
Phœnicia; 1 mile north of; 60 feet west of track, boulder, chisel marked	942.99
Chichester, opposite station; top of rail	1,013.83
Chicester, 400 feet north of station; east of track, boulder, chisel marked	1,018.24
Chichester, 0.7 mile north of; in southwest angle of crossing, rock, chisel marked	1,064.04
Chichester, 1.7 miles north of; bridge, north abutment, east end, top stone, chisel marked	1,150.61
Lanesville, 200 feet south of station; east side of track, boulder, chisel marked	1,350.35
Lanesville, 1 mile north of; 10 feet east of track, boulder, chisel marked	1,536.61
Edgewood, 0.5 miles south of; open drain, west end, south wall, top stone, chisel marked	1,729.94
Edgewood, 300 feet north of station; bridge, north pier, east end, in top stone, bronze tablet, marked "1790 ALBANY"	1,789.764
Edgewood, 1 mile north of; 10 feet east of track, boulder, chisel marked	1,963.16
"The Notch," in northwest angle of crossing, point on boulder, chisel marked	2,066.39
Kaaterskill Junction; opposite station, on south side of track, boulder, chisel marked	1,722.41
Hunter, 1 mile south of; highway bridge, east abutment, south end, top stone, chisel marked	1,619.33
Hunter, opposite schoolhouse; top of hydrant	1,601.26
Hunter, public school building; in foundation wall north side of front entrance, aluminum tablet, marked "1602 ALBANY"	1,601.720
Hunter, 1.5 miles north of; highway bridge over Schoharie Creek, east abutment, south end, top stone, chisel marked	1,534.30
Hunter, 3.2 miles northwest of; 80 feet southeast of fork with private road north, rock, chisel marked	1,475.25
Jewett Center, 0.5 mile east of; opposite fork of road to south, on north side of road, boulder, chisel marked	1,443.17
Jewett Center, East Kill bridge; east abutment, north end, top stone, aluminum tablet, marked "1405 ALBANY"	1,404.886

	Feet.
Jewett Center, 0.7 mile west of; fork with road to north, in northeast angle, ledge of rock, chisel marked	1,376.22
Lexington, Schoharie Creek bridge; north pier, west end, top stone, aluminum tablet, marked "1329 ALBANY"	1,328.918
Lexington, 2 miles west of; culvert, south end, top stone, chisel marked	1,313.05
Lexington, 2.5 miles north of, Schoharie Creek bridge; north abutment, east end, top stone, chisel marked	1,274.94
Prattsville, 3.5 miles east of; fork with West Kill road, in southeast angle, stone, chisel marked	1,214.37
Prattsville, 2 miles east of; on north side of road opposite fork with private road south, ledge of rock, chise marked	1,224.07
Prattsville, 1 mile east of; Red Kill bridge, east abutment, south end, top stone, chisel marked	1,180.39
Prattsville, public school building; in front wall, aluminum tablet, marked "1164 ALBANY"	1,163.861

PRATTSVILLE TO WINDHAM.

Redfalls, 200 feet east of post-office; on south side of road, flat rock	1,275.30
Redfalls, 0.7 mile east of; small culvert midway between farmhouses on north and south side of road, on north end of, chisel marked	1,330.56
Ashland, 0.7 mile west of; small culvert, north end of, chisel marked	1,395.84
Windham, 0.7 mile east of; opposite gate to mill race, south side of road, on top stone over drain, chisel marked	1,491.81
Windham, bridge over Batavia Creek on road to Hunter; top of north abutment, east end, bronze tablet, marked "1517 ALBANY"	1,517.117

PRATTSVILLE TO GILBOA.

Prattsville, at fork with Grand Gorge road, Schoharie Creek bridge; east approach, top stone north retaining wall of, at end of railing, chisel marked	1,150.27
Prattsville, 1.2 miles north of; on east side of road, opposite yellow barn, boulder, chisel marked	1,138.44
Prattsville, 3 miles north of; on west side of road, 40 feet south of fork with private road east, small boulder, chisel marked	1,065.75
Gilboa, 1.2 miles south of; Manorkill bridge, south abutment, east end, top stone, chisel marked	1,114.93
Gilboa, 800 feet north of; on east side of road, opposite bridge over Schoharie Creek, in ledge of rock, bronze tablet, marked "1010 ALBANY"	1,009.473

GILBOA TO MANORKILL.

Strykersville, bridge 40 feet west of post-office; on southwest abutment, chisel marked	1,259.40
Conesville, 1 mile west of; farmhouse painted white with green shutters, at east side of entrance, rock, chisel marked	1,347.29
Conesville, 150 feet west of post-office; bridge, on northeast corner abutment, chisel marked	1,382.51
Conesville, 1 mile east of; 400 feet east of farmhouse on north side of road, on north end of small culvert, chisel marked	1,412.66
Manorkill, 0.7 mile west of; 100 feet east of white farmhouse on north side of road, on south end of culvert, chisel marked	1,470.67
Manorkill, white church opposite post-office; in southeast corner of, bronze tablet, marked "ALBANY 1515"	1,514.578

GILBOA, VIA BLENHEIM, TO BREAKABEEN.

	Feet.
Gilboa, 1 mile north of; 100 feet south of schoolhouse, on west side of road, boulder, chisel marked	948.72
Gilboa, 2 miles north of; 50 feet west of fork of roads, on south edge of road, flat stone, chisel marked	984.22
Gilboa, 4 miles north of; 100 feet north of junction with road from Grand Gorge, on west side of road, boulder, chisel marked	1,141.63
Blenheim, 2 miles south of; 400 feet south of fork with private road to east, flat rock, chisel marked	1,069.17
Blenheim, 350 feet south of Blenheim House; on west side of street, point on ledge of rock, chisel marked	813.67
Blenheim, 300 feet north of post-office; northwest side of road, in ledge of rock, aluminum tablet, marked "813 ALBANY"	812.779
Blenheim, 1 mile northeast of; bridge over Schoharie Creek, north side of road, on wing wall at west end of, chisel marked	791.24
Blenheim, 2.3 miles northeast of; southeast side of road 200 feet north of farmhouse, on rock, chisel marked	754.09
Breakabeen, Lutheran Church; aluminum tablet, marked "ALBANY 754"	753.723

FRANKLINTON TO LIVINGSTONVILLE.

Franklinton, 1.2 miles south of; east side of road, 150 feet south of unpainted farmhouse and 25 feet south of watering trough, rock, chisel marked	1,159.75
Livingstoneville, 0.7 mile west of; in fork of roads, on brownstone rock, chisel marked	1,074.29
Livingstoneville, Methodist Church; in northwest corner of, bronze tablet, marked "ALBANY 1077"	1,076.716

ULSTER AND ORANGE COUNTIES.

NEWBURG QUADRANGLE.

The elevations published in the following list are based on an aluminum tablet set in the front face of the city hall, in Poughkeepsie, and marked "173 ALBANY 1899." The height of this is derived from a bench mark established in Poughkeepsie by the United States Coast and Geodetic Survey, the elevation of which, as corrected in accordance with their adjustment of 1900, is accepted as 42.956 feet above mean sea level. Dependent on this, the datum tablet of this survey in Poughkeepsie is accepted as being 172.613 feet above mean sea level.

The leveling was executed under the direction of Mr. C. C. Bassett, topographer. A portion is republished of levels of Mr. Seth Van Loan, levelman, run in 1899, and published in the Appendix to the Twenty-first Annual Report of the Director of this Bureau, on pages 405, 406, and 407. They are republished here because of an error of 0.97 foot, by which the figures previously published exceed the corrected elevations given herewith. There figures include a gross error of 1 foot in leveling from Poughkeepsie, via Highlands, along West Shore Railroad to Newburg (pages 404 to 405 of that report), less a correction

of 0.030 foot, by which the present accepted elevations of the Poughkeepsie bench marks exceed their previously accepted values. The bench marks are therefore marked about 1 foot higher than their present accepted elevations. The remainder of the elevations listed below are the result of leveling of Mr. George Baily, levelman, during the season of 1900.

All bench marks dependent on this datum are referred to the Gristmill bench mark at Albany, the elevation of which is accepted as 13.577 feet above mean sea level, and are marked with the letters "ALBANY" in addition to the figures of elevation.

NEWBURG, VIA ERIE RAILROAD, TO CORNWALL.

	Feet.
Newburg; tablet set near southwest corner, to the right of entrance post-office building, marked "ALBANY 95"	94.130
Newburg, 1 mile southwest of; projection, first course east end, south abutment, bridge seat; chisel marked	94.19
West Newburg; point second step from top east end, north abutment, bridge at station	121.13
New Windsor; top embedded stone under tree 200 feet south of station and east of railroad	188.40
Vails Gate Junction, point on stone east of track and 100 feet south of; chisel marked	279.56
Cornwall, $\frac{3}{4}$ mile north of; point on stone edge of road crossing	248.6

CORNWALL, VIA NEWBURG JUNCTION, ALONG ERIE RAILROAD, TO OXFORD.

Cornwall, 600 feet north of; tablet set in face of west abutment, New York, Ontario and Western Railroad bridge	271.299
Mountainville, 1 mile north of; top step, east end, north abutment of cattle pass	260.92
Mountainville, $\frac{1}{2}$ mile north of; point on bridge seat near end of truss, west end, south abutment, railroad bridge	227.16

CORNWALL, VIA WOODBURY AND TURNERS, ALONG ERIE RAILROAD, TO OXFORD.

Houghton Farm station; point on stone in east ditch 300 feet north of ..	295.34
Woodbury, 1 mile north of; point on bowdler, east ditch; old marked point	382.57
Woodbury, $\frac{3}{4}$ mile north of; point on stone in east side of track, 50 feet north of rock cut; chisel marked "U. S."	398.60
Woodbury; point on northeast foot block at end of truss bridge, 200 feet south of station	433.49
Woodbury, $\frac{3}{4}$ mile south of; stone in east ditch; chisel marked	461.82
Highland Mills; point on stone northeast corner bridge west of station ..	474.4
Central Valley; point on stone east end, south abutment, bridge seat, 200 feet north of station	481.79
Central Valley, 1,000 feet south of; stone in west ditch along railroad ..	489.62
Central Valley; tablet set in large stone in retaining wall front of Finken's place, first west of Noxon's store, marked "ALBANY 488"	486.919
Central Valley, 2 miles south of; stone west of track, 200 feet south of farm crossing	520.63

	Feet.
Newburg Junction, $\frac{1}{2}$ mile north of; point on bridge seat, east end, south abutment railroad bridge	515.82
Arden; Echo Lake, surface of water	706
Arden, 300 feet north of; point on top east end, north abutment, bridge over stream; chisel marked	519.75
Arden; tablet set in pier top east end railroad bridge over stream, 300 feet north of station, marked "ALBANY 519"	518.280
Arden, $1\frac{1}{2}$ miles east of; stone north side of road on hill; chisel marked "U. S."	798.85
Arden, 4.7 miles east of; stone 250 feet north of barn and west of road	912
Doyle's, $\frac{1}{2}$ mile east of; tablet set in road face of large boulder marked "ALBANY 718"	717.506
Turner's, 300 feet west of; point on north end, west abutment, bridge; chisel marked "U. S."	552.37
Turner's, $1\frac{1}{2}$ miles west of; point north end, east abutment, culvert	561.24
Monroe, $\frac{1}{2}$ mile east of; point top north end west abutment of culvert	589.90
Monroe; south end Carpenter's feed store doorstep	606.97
Oxford, 300 feet east of; point north end, east abutment, overhead bridge	529.5
Oxford, point on rock at edge of path to spring, $\frac{1}{2}$ mile west of; chisel marked "U. S."	512.86

OXFORD, VIA BURNSIDE, TO CORNWALL.

Greycourt, 1,200 feet east of; point north end, east abutment, culvert; chisel marked	432.99
Greycourt; tablet set in face of north abutment, Lehigh and Hudson River Railway bridge over road, marked "ALBANY 447"	445.854
Greycourt; point northwest corner south pier, under second bent from south end, Lehigh and Hudson River Railway bridge at; marked with old "X"	435.81
Greycourt; point bridge seat east end, north abutment, Lehigh and Hudson River Railway bridge over Erie Railroad	447.61
Craigville, 300 feet north of; point second step from top, south abutment, east end, cattle pass	421
Farmingdale, 500 feet north of; point top south abutment, east end, cattle pass	376.85
Farmingdale, $\frac{1}{2}$ mile north of; point top south abutment, west end, cattle pass	389.31
Hamptonburg, $\frac{1}{2}$ mile south of; point top east end, south abutment, cattle pass	399.39
Hamptonburg, point $\frac{3}{4}$ mile north of; on west end, north abutment, cattle pass	399.6
Elesmere, $\frac{1}{2}$ mile south of; point second step from top, west end, north abutment, cattle pass	370.39
Burnside, $\frac{1}{8}$ mile south of; point second step, east end, north abutment, railroad bridge over swamp on Lehigh and Hudson River Railway	347.17
Burnside, $1\frac{1}{4}$ miles east of; tablet east face of road bridge abutment, marked "ALBANY 357"	356.421
Burnside, $\frac{1}{2}$ mile east of; point north end, east abutment, road bridge	369.8
Little Britain, 1 mile west of; point stone north side track, 20 feet east 62-mile post	448.12
Little Britain, 600 feet east of; point south end, east abutment, cattle pass	436.4

	Feet.
Meadowbrook, $1\frac{1}{2}$ miles west of; point south end, west abutment, top course bridge over road	404.84
Meadowbrook, 400 feet east of; point north end, east abutment, culvert	334.8
Cornwall, $\frac{2}{3}$ mile east of; point on coping west end, south abutment, Erie Railroad bridge	335.92
Cornwall; point on step north end, west abutment, bridge New York, Ontario and Western Railroad	269.41

NEWBURG, COLDENHAM, WALDEN, TO NEW HURLEY STATION.

Newburg; post-office building, in southwest corner of, to the right of entrance, aluminum tablet marked "95"	94.130
Newburg; at corner of Johnson street and Broadway, slab over drain, chisel marked	124.21
Newburg; corner of West street and Broadway, top of nut on hydrant	164.27
Newburg, 2 miles west of; at corner of Herman's place, fork with road to Orange Lake, nail in root of tree	249.28
Newburg, 3.5 miles west of; 150 feet west of crossroads, stream flowing southeast, point cut on coping stone at south end of culvert ..	390.59
East Coldenham, 60 feet east of fork with Orange Lake road; on north side of road, chisel-marked boulder	504.41
Coldenham, 0.5 mile east of; in southwest angle of crossroads, boulder chisel marked	460.71
Coldenham, 0.7 mile east of; at stream flowing north, culvert, at north end of, on coping, chisel marked	404.19
Coldenham, 0.2 mile west of; at entrance to A. B. Lindsay's place, large stone gatepost, aluminum tablet, marked "ALBANY 434" ..	434.345
Berea, Philadelphia and Reading Railroad crossing at; top of west rail of main track	410
Montgomery, 1.5 miles east of; in northeast angle of crossroads, boulder chisel marked	414.84
Walden, 1.7 miles south of; in southeast angle at fork with road to east, boulder chisel marked	394.31
Walden, 0.5 mile south of; Wallkill Valley Railroad crossing, top of west rail	383.8
Walden, "National Bank of Walden;" in southeast corner of, aluminum tablet, marked "ALBANY 376"	374.862
Walden, station Wallkill Valley Railroad; top of west rail of main track ..	352.9
Walden, 1.25 miles north of; at railroad and highway crossing, top of rail	324.8
Walden, 1.5 miles north of; open culvert on Wallkill Valley Railroad, west end of south wall of, on coping stone, chisel marked ..	315.90
Borden condensed milk factory, culvert over stream flowing into pond; stone on southeast corner of coping on west end of, chisel marked ..	292.25
Wallkill, 400 feet south of station; at highway crossing, top of rail	278.8
Wallkill; point cut on foundation stone of water tank	278.86
Wallkill, 0.2 mile north of; at crossing, top of rail	278.1
New Hurley, 1.5 miles south of; in northwest angle of railroad and highway crossing, boulder chisel marked	305.48
New Hurley, 75 feet east of railroad and 15 feet north of highway; boulder chisel marked	336.50

NEW HURLEY POST-OFFICE, VIA PLATTEKILL AND BALMVILLE, TO
NEWBURG.

	Feet.
New Hurley post-office: in northwest angle of forks of road, at school-house, boulder, chisel marked	453.86
Sylva, 0.5 mile southwest of; on west side of road 150 feet north of brow of hill, boulder, chisel marked	543.77
Sylva, 0.1 mile west of post-office; in northeast angle of crossroads, boulder, chisel marked	552.58
Sylva, 0.2 mile east of; at fork with road to north, boulder, chisel marked	556.24
Plattekill, west end of village: floor of bridge over brook	552.9
Plattekill, 0.2 mile east of; bridge over stream flowing south, at north end of, on top stone of retaining wall, chisel marked	553.88
Plattekill, 2 miles east of; on south side of road, boulder, marked "571 U. S."	570.07
Plattekill, 3.8 miles east of; junction with Marlboro road, southeast of, stone, chisel marked	617.15
Prospect Signal, 0.5 mile south of, in fork of roads, rock, chisel marked	379.04
Balmville Big Tree, on stone foundation of fence surrounding, chiseled point	194.33

NEW HURLEY STATION, VIA GARDINER AND NEWPALTZ, TO LOYD.

New Hurley, 0.7 mile north of; culvert over dry drain, coping at west end of, chisel marked	303.04
Gardiner station; 150 feet south of, in east wall of culvert, bronze tablet, marked "ALBANY 309"	307.798
Gardiner, 1.1 miles north of; at crossroads, 50 feet west of railroad crossing, on spike in signpost	322.70
Forest Glen station, 0.2 mile south of; trestle, at south end of, east side of track, on wall, chisel marked	397.41
Newpaltz, 1.8 miles south of; trestle, at north end of east side of track, on wall, chisel marked	222.08
Newpaltz, Newpaltz Savings Bank; in southwest corner, bronze tablet, marked "ALBANY 237"	235.663
Ohioville, Ohioville Hotel; on mounting stone in front of, chisel marked	364.76
Eltings Corners; on rock on southeast corner, chisel marked	366.93
Loyd, Centerville Hotel; in southeast corner of, bronze tablet, marked "ALBANY 359"	357.768

LOYD TO HIGHLAND.

Loyd, 1.2 miles east of; opposite Central New England Railroad and highway crossing, on stone base of electric railway viaduct pillar, chisel marked	334.79
Highland station; 100 feet west of; small trestle, on southwest abutment, chisel marked	282.19
Poughkeepsie Bridge; west abutment, southwest corner top stone, chisel marked	224.93

LOYD TO CLINTONDALE.

Loyd, 2.5 miles south of; 25 feet north of fork with road to the right to Clintondale, left side of road, on rock, chisel marked	551.85
Clintondale, Ambrose's store; in southwest corner of, bronze tablet marked "ALBANY 553"	552.331

DUTCHESS AND COLUMBIA COUNTIES.

POUGHKEEPSIE, RHINEBECK, MILLBROOK, DOVER, COPAKE, AND KINDERHOOK
QUADRANGLES.

The elevations published in the following list are derived by connection with two lines of precise leveling carried to Greenbush, N. Y., near Albany, from mean sea level at New York and Boston and adjusted to the corrected mean elevation of the Greenbush "Gristmill" bench mark as determined by the latest adjustment of the United States Coast and Geodetic Survey. Part of this list consists of levels adjusted between Poughkeepsie and Chatham, and the bench marks listed between Poughkeepsie and Millerton, via Clinton Corners and Dover Plains, are republished, from the Appendix to the Twenty-first Annual Report of the Director of this Bureau, following the title on page 401, with corrected elevations resulting from this adjustment. The remainder of the list consists of levels adjusted between Niverville and Hudson. The descriptions and elevations of the connecting points are given in the body of the list.

The leveling was executed under the general direction of Mr. C. C. Bassett, topographer, in 1899 and 1900, the portion which is here republished from the last report being the result of leveling by Mr. Seth Van Loan, levelman, in 1899, the remainder being the work of Mr. George Baily, levelman, in 1900.

All bench marks are referred to the Gristmill bench mark near Albany, the elevation of which is accepted as 13.577 feet above mean sea level, and are marked by the letters "ALBANY" in addition to their figures of elevation.

POUGHKEEPSIE.

	Feet.
Station; brass bolt keyed in fifth stone above ground, second step from east end of column on north side of arch bridge, marked "+ ".....	42.956
Intersection of Main street and Davies place; top of iron post.....	82.25
Intersection of Mill and North Bridge streets; top of hydrant.....	133.89
Intersection of North Bridge and Mansion streets; top of northeast curb.....	141.00
Intersection of Mansion and Washington streets; top of northwest curb.....	166.57
Intersection of Mansion and Gardner streets; top of northeast curb.....	168.16
Railroad repair shop; top of plug in 2-inch pipe set in ground 4 feet west of southwest corner of.....	181.80
Poughkeepsie and Eastern Railroad station; joint of rail nearest.....	181.84
City hall; tablet set in front face, marked "ALBANY 173".....	172.613

POUGHKEEPSIE, VIA PLEASANT VALLEY AND SALT POINT, TO CLINTON
CORNERS.

Poughkeepsie; point on corner first step, east abutment; south end of bridge over small creek, first east of station.....	172.56
Poughkeepsie; point on top stone of old culvert just east of Salt Point crossing.....	193.49
Poughkeepsie; point in circle on large rock between tracks of Poughkeepsie and Eastern Railroad and Poughkeepsie Bridge route, and about $\frac{1}{4}$ mile east of Salt Point crossing.....	211.53

	Feet.
Poughkeepsie; point on top stone, northwest end of west abutment small bridge east of Van Wagner's crossing.....	242.84
Poughkeepsie; point in corner third step from top, south end, west abutment, cattle pass and bridge at Landis's place, 1 mile west of Pleasant Valley.....	232.21
Pleasant Valley, $\frac{1}{2}$ mile west of; top stone, north end, west abutment of small bridge.....	211.37
Pleasant Valley, $\frac{3}{8}$ mile east of; point of rock chisel marked "⊙ U.S.": north side track, rock cut $\frac{1}{2}$ mile east of crossing.....	227.50
Pleasant Valley, 2 miles east of; point on second stone from top of north end, east abutment, cattle pass.....	233.18
Pleasant Valley; tablet set in face of rock north side of track, 300 feet east of station, marked "ALBANY 211".....	211.086
Salt Point, $\frac{3}{8}$ mile west of; point on face of stone near ground, about middle of west abutment Central New England Railway bridge over Poughkeepsie and Eastern Railroad, chisel marked "U. + S.".....	252.89
Salt Point; point on embedded stone edge of roadway just east of station.....	252.16
Salt Point, 1 mile east of; corner second stone from top of south end, west abutment, Leggett's Bridge.....	266.96
Clinton Corners; point on rock in edge of road between Wright's store and Brown's house.....	306.48
Clinton Corners; nail in locust stump under wall in front of Brown's house.....	303.53
Clinton Corners; Upton Lake, surface of water.....	303
Clinton Corners; tablet set in coping stone, north end, west abutment, bridge over Salt Point Creek, marked "ALBANY 244".....	244.395

CLINTON CORNERS, VIA WASHINGTON HOLLOW AND SOUTH MILLBROOK,
TO DOVER PLAINS.

Hibernia; point on east side, south abutment, near end of truss bridge over creek.....	251.09
Hibernia; nail in root of large maple at Four Corners.....	284.57
Washington Hollow, $\frac{3}{8}$ mile north of; point on flat rock west side of road, about 600 feet south of Howell's place; point chisel marked "U.S.".....	334.14
Washington Hollow; point on embedded rock near point of rock front of Wheeler's Hotel.....	330.52
Millbrook, 3 miles from; nail in root of butternut tree in grass triangle formed at Sharon road intersection.....	410.79
Millbrook, 2 miles west of; point in stone in south parapet wall of bridge over stream; point marked "U.S.".....	459.22
South Millbrook, $\frac{1}{2}$ mile west of; point on rock north side of road, chisel marked "U.S.".....	543.62
South Millbrook, point on stone in edge of road northeast corner road intersection at; chisel marked "U.S. 544.7".....	548.04
Millbrook; aluminum plate on west side Millbrook Bank near southwest corner of building, marked "ALBANY 568".....	568.484
South Millbrook, point on rock brow of long hill east of; south side of road and chisel marked "U.S.".....	658.27
Little Rest, $\frac{1}{2}$ mile west of; point on embedded boulder near fence north side of road, about 300 feet west of John Sheehy's.....	743.47
Dover Plains, 4 miles from; point on rock road corner at Stillings Point, chisel marked "U.S.".....	909.50

	Feet.
Dover Plains, 3½ miles west of; nail in root of elm tree at road intersection in front of Haight's	843.04
Stone Church Brook; point on south side road about 20 feet west of bridge over point chiseled, marked "U.S. 804"	807.34
Dover Plains, 1½ miles north of; nail, root of middle maple on north side of triangle at road crossing	466.97
Dover Plains; point of rock in triangle in front of schoolhouse, road intersection	410.75
Dover Plains, post at Ketchum's corner: top of	403.45
Dover Plains, nail in timber foundation of flag pole at Dover Plains hotel; chisel marked "U.S."	407.28
Dover Plains; tablet set in northwest corner of bank, marked "ALBANY 406"	406.226

DOVER PLAINS, VIA WASSAIC AND AMENIA ALONG HARLEM RAILROAD,
TO MILLERTON.

Dover Plains, 4 miles from: stone under southwest corner of Smith's corner	435.24
Wassaic, 1 mile south of; point on end stone, third course from top east end, north abutment, bridge over highway, chisel marked "U.S."	435.36
Wassaic, ½ mile south of; corner of stone on buttress, face north abutment, bridge over Wassaic Creek	442.50
Wassaic, 600 feet south of; point west end north abutment, bridge over stream	452.79
Amenia, mill pond: surface of water	534
Amenia station; point east end south abutment, overhead bridge south of	552.47
Amenia, 1 mile north of; point on stone west edge railroad 300 feet south of road crossing	582.57
Amenia; aluminum tablet set in corner stone, southwest corner Amenia Bank, marked "ALBANY 573"	573.53
Sharon, point on rock west side railroad 360 feet north of; 86/45 milepost, point marked with chisel "U.S."	577.26
Sharon station, ¼ mile north of; point on stone west of railroad 300 feet north of 88/39 milepost	626.35
Coleman, ⅓ mile north of; point on second step from top west end north abutment, overhead bridge No. 125	586.34
Amenia-Millerton-Pine Plains-Sharon road intersection, corner coping stone under girder, west end north abutment, bridge at	623.27
Millerton, ½ mile south of; point on east end north abutment bridge No. 30	680.28
Millerton, first bridge north of; point on second stone from top, west end south abutment	699.20

MILLERTON, VIA SHEKOMEKO ALONG NEWBURG, DUTCHESS AND CONNECTICUT RAILROAD, TO PINE PLAINS.

Millerton; aluminum tablet on northeast front of brick block hotel marked "ALBANY 701"	700.741
Millerton, point on second stone from top, south end west abutment, bridge on Newburgh, Dutchess and Connecticut Railroad at crossing	706.28
Millerton; point on cattle pass bridge No. 70, 800 feet west of railroad intersection	717.1

	Feet.
Millerton; point on cattle pass bridge No. 63, second step, east end south abutment	738.82
Winchell's station, 700 feet south of; point on rock north of track	949.58
Winchell's station, $1\frac{1}{4}$ miles west of; point east end south abutment cattle pass bridge No. 66	864.39
Shekomeko, 1 mile north of; point on fourth step from top, west end south abutment, overhead bridge No. 63	731.53
Shekomeko, $1\frac{3}{4}$ miles west of; point on embedded stone west side of track; chisel marked "U.S." 100 feet west of bridge No. 61	572.98
Bethel station, point north end, west abutment, bridge No. 57, west of; chisel marked "U.S."	500.45
Bethel station, $\frac{1}{2}$ mile west of; point lower step, south end, west abutment, cattle pass bridge No. 56	513.81
Pine Plains, $\frac{1}{4}$ mile east of; point on stone south side of track in rock cut 600 feet east of road crossing	489.02
Pine Plains; nail in root of elm tree north of track, east of road at station	469.58
Pine Plains; aluminum tablet set in stone foundation of Myer's dwelling, near southeast corner of house, marked "ALBANY 474"	474.286
Pine Plains, point west end, north abutment, culvert No. 55, 300 feet south of crossing $\frac{3}{4}$ mile south of	661.73

PINE PLAINS, VIA STISSING AND STANFORDVILLE, TO CLINTON CORNERS.

Pine Plains, road crossing $2\frac{1}{4}$ miles south of; point on second step, west end, south abutment, bridge No. 54, 200 feet north of road crossing	453.02
Attlebury station, point east side cattle pass, bridge No. 52, $\frac{1}{2}$ mile south of station	443.84
Stissing station, $\frac{1}{4}$ mile north of; point on stone east of track	446.01
McIntyre, aluminum tablet set in face of south abutment, third course from ground, Central New England bridge at; marked "ALBANY 399"	399.048.
Stanfordville station, point on rock west side of track, 600 feet north of; chisel marked "U.S."	333.11
Stanfordville, $\frac{1}{2}$ mile south of; point on stone east edge of track, 150 feet south of crossing	331.39
Stanfordville, 1 mile south of; point south end embedded timber trestle	320.79
Stanfordville 1 mile south of; spike driven in base of telegraph pole, second east of trestle	323.12
Willow Brook; point on bowlder west side of road, north of railroad station, chisel marked "U.S."	354.01
Willow Brook, $\frac{3}{4}$ mile west of; point of rock north side of track, between two small rock cuts, point chisel marked "U.S."	372.22
Clinton Corners Crossing, point on top stone southwest corner west abutment, first bridge west of	300.21

MILLERTON, VIA BOSTON CORNERS, CRARYVILLE, AND PHILMONT, TO CHATHAM.

Millerton; bronze tablet in brick block hotel, marked "ALBANY 701"	700.741
Millerton, 1.25 miles north of; east side of track, small culvert, chiseled mark	737.89
Mount Rigg Station, 1.5 miles north of; stream to west, on northwest corner of culvert (stream 3 feet lower)	773.09

	Feet.
Boston Corners, 300 feet south of station, in top of southeast corner of culvert on New York Central Railroad, bronze tablet, marked "ALBANY 727"	726.809
Copake Iron Works, 500 feet south of station; on northwest abutment of railroad bridge (stream to west 25 feet below)	674.01
Copake Iron Works, 1.5 miles north of road crossing; 15 feet southeast of, on rock	641.62
Hillsdale, 1.5 miles south of; on northwest abutment of bridge over road and stream to west (stream 30 feet lower)	617.56
Hillsdale, 0.75 mile south of; on northeast corner of culvert over dry ditch	641.21
Hillsdale station, 50 feet west of; north side of track, on spike in telegraph pole	678.78
Craryville, 0.5 mile east of; south side of track, on west wall of culvert, stream to south	640.23
Craryville, 500 feet west of station; south side of track, in west abutment of railroad bridge, bronze tablet, marked "ALBANY 635"	634.848
Craryville, $1\frac{1}{2}$ miles northwest of; north side of track, on west wall of small culvert	653.75
Martindale, 0.9 mile south of; on northwest corner of small culvert	673.47
Martindale, station, just north of; at crossing, west rail	639.2
Martindale, 1 mile north of; on northwest corner of arch bridge over road	601.71
Philmont, 1.75 miles south of; 50 feet from private road crossing, on west end of small culvert	542.16
Philmont, 700 feet south of station; on southeast abutment of bridge (creek flowing west 30 feet below)	518.24
Philmont, Empire House; in the west side of, in stone over cellar window, bronze tablet, marked "ALBANY 525"	525.227
Philmont, 1 mile north of; road crossing, 20 feet east of track, north side of road, cut on rock	474.98
Philmont, 2.8 miles north of; 11 feet below track, 10 feet above highway, on northwest corner of culvert over road	400.56
Ghent, 0.75 mile south of; road crossing, south of, on east side of track, stone over ditch	385.18
Ghent, $\frac{1}{2}$ mile south of; on southwest corner of culvert (stream to west 15 feet below)	390.176
Ghent, just south of station New York Central Railroad; at crossing, east track, east rail	397
Ghent, $\frac{1}{2}$ mile north of; on southeast abutment of New York Central Railroad bridge, marked "400"	399.72
Chatham, 1.5 miles south of; on New York Central Railroad, on west end of culvert (small stream to west)	429.43
Chatham, east side of tenth roof support from east end of station train side, being a bench mark of the Massachusetts topographic survey commission, plate marked "4710"	470.663
Chatham; in northeast corner of Masonic Block, about 3 feet from ground, aluminum tablet, marked "ALBANY 470"	470.05
Chatham, about 1 mile north of; on west abutment of bridge 201, top stone, being bench mark No. 84 of the Massachusetts topographical survey commission, marked by a hole and "B. S.," bottom of hole ...	519.206

NIVERVILLE, VIA STUYVESANT FALLS, TO HUDSON.

	Feet.
Niverville, alongside Rinderbrook River, in water tank at: near north-west corner of, in brick about 4 feet from ground, being a bench mark of the Massachusetts topographical survey commission, marked "B-O-M," center of hole	322.67
Niverville; in southwest corner of brick water tank, 3 feet from ground, bronze tablet, marked "ALBANY 323"	322.658
Valatie, 1.5 miles north of; east side of track, 20 feet south of private road crossing, 3 feet below track, on spike in telegraph pole No. 827 (stream to southeast 250 feet south, water elevation 256 feet)	261.92
Valatie, 0.75 mile north of; on west end of small culvert	256.03
Valatie, road crossing, west rail	245
Valatie, 150 feet north of station; on east side of track, on spike in telegraph pole No. 743, marked "243"	242.66
Kinderhook, 100 feet south of station; north side of highway, 10 feet west of track, on top stone over drain, marked "259"	258.73
Kinderhook, 1.25 miles south of; on southwest corner of small culvert, chiseled out, marked "238"	237.66
Sunnyside, 50 feet north of station; east side of track, on spike in telegraph pole No. 547, marked "225"	224.41
Stuyvesant Falls, 100 feet south of station: east side of track, on spike in west side of shed, marked "184"	183.12
Stuyvesant Falls, bridge over Kinderhook Creek, west end of, in end of north wing wall, bronze tablet, stamped "ALBANY 156"	156.057
Rossmans, 0.5 mile north of station; east side of track, on north wall of open culvert, lowest step 4 feet below track, marked "92"	91.94
Rossmans, station; road crossing 100 feet south of, east rail	63.3
Rossmans, 0.25 mile south of station on south end of retaining wall west side of track	52.77
Stockport, 1 mile north of: bridge over Kinderhook Creek, on southeast corner of, on third step from top	35.66
Stockport Center, road crossing just north of station: west rail	46.7
Stockport Center, 0.3 mile south of; bridge over Claverack Creek, on north abutment wall of, 4 feet west of rail	58.79
Stockport, 1 mile south of; on southwest corner of small open culvert, next to lowest step	112.78
Stottville, 150 feet north of station, road crossing; east rail	125.1
Stottville, 0.8 mile south of; 3 feet below track, on west end of small pipe culvert, marked "153"	152.94
Hudson, 2.9 miles north of; 1 mile north of junction of Boston and Albany and Kinderhook and Hudson railroads; culvert, west end of, 6 feet below track, chiseled mark "152"	151.28
Hudson, 1.9 miles north of; junction of Boston and Albany and Kinderhook and Hudson railroads, between tracks on spike in guard pole	156.73
Hudson, upper station; on northeast end of, 1 foot from ground, marked "ALBANY 151"	151.17
Hudson, Diamond street: crossing electric railway and railroad	150.7
Hudson Station, United States Coast and Geodetic Survey bench mark No. 4, described by them, "A R. R. bench, the usual round-headed bolt, in west side of top of stone pier under iron column, under overhead bridge in street leading to docks and Athens ferry. The first one north of Hudson Station. It is (the pier) under the second column from south end in the east row of three"	10.398

JEFFERSON AND ST. LAWRENCE COUNTIES.

CLAYTON, THERESA, AND ALEXANDRIA BAY QUADRANGLES.

The elevations published in the following list are based upon permanent bench marks established in the course of precise levelings by the Deep Waterways Commission at Clayton, Fishers Landing, Alexandria Bay, and Chippeway village, in the vicinity of Cape Vincent, N. Y. The accepted elevations of these are derived by the latest adjustment of the United States Coast and Geodetic Survey, made in 1900 (see Appendix No. 8, report for 1898-99 of that Bureau).

The leveling was executed under the general direction of Mr. W. H. Lovell, topographer, by Mr. William Kelley, levelman, in 1900.

All bench marks are referred to the Deep Waterways Commission's bench marks at Cape Vincent, which are published in the Coast Survey report, the elevations there given being accepted, and they are stamped with the letters "CAPE VINCENT" in addition to their figures of elevation. The latter are generally 1 foot lower than the values stamped upon the bench marks, because of a subsequent adjustment, as explained under precise leveling (p. 27).

CLAYTON, VIA CLAYTON CENTER AND DEPAUVILLE, TO LIMERICK.

	Feet.
Clayton, Catholic Church: in water table at southwest corner of, copper bolt	278.742
Clayton, James street: in front of Mrs. Linnell's residence on back part of top of fire hydrant, copper bolt, marked "CAPE VINCENT 289"	287.558
Clayton, about 2 miles south of; on highest point of summit, on east side of boulder, on boulder, cut point, marked "382"	381.22
Clayton Center, residence of Merritt Lengenfelder: on west face of building at south corner in stone foundation wall, bronze tablet, marked "CAPE VINCENT 423"	422.004
Clayton Center, at southeast corner of crossroads; on boulder at ground surface, chiseled point	418.49
Clayton Center, 1.5 miles south of; 50 feet east of intersection of crossroads, on south side of road running east, on boulder, cut point, marked "375 feet"	373.66
Clayton Center, 2.3 miles south of; intersection of roads, northwest corner, near schoolhouse, district 10, Clayton (town), ledge of rock, cut point, marked "309 feet"	307.96
Clayton Center, 3 miles south of; intersection of road, on south of road, in horse block in front of house, cut point, marked "299 feet"	298.27
Depauville, about 0.5 mile northeast of; south side of road, boulder, cut point, marked "285 feet"	283.48
Depauville, diagonally across from Grabber's Hotel; in cross walk at intersection of roads, chisel mark	287.07
Depauville: at stone bridge, crest of dam	271
Depauville: at stone bridge, base of dam	266
Depauville: stone bridge roadway	276
Depauville, under stone bridge, surface of water	271
Depauville, on road to Gunns crossroads: on truss bridge, roadway	276
Depauville; under truss bridge, surface of water	271

	Feet.
Depauville, at crossroads in; under residence of Ira Gillett, in east corner of stone foundation wall, aluminum tablet, marked "299 CAPE VINCENT"	297.476
Depauville, 1 mile southeast of; on east side of road, 50 feet south of culvert, on ledge of rock, cut point, marked "403 feet"	401.86
Depauville, 2 miles southeast of; west side of road, 12 feet south of culvert, in rock, cut point, marked "409"	407.55
Depauville, 3 miles southeast of; west side of road, 260 feet north of house, on ledge of rock, cut point, marked "402"	400.05
Depauville, 4 miles southeast of; on west side of road at crossroads, on rock in wall, cut point, marked "412"	411.13
Gunns Corners, 100 feet westerly of intersection of crossroads; on side of road to Perch River, on bowlder, cut point, marked "368"	366.36
Perch River, stone schoolhouse; in northeast corner of water table, bronze tablet, marked "338 CAPE VINCENT"	336.920
Perch River, south of road to Brownville; bridge over Perch River, roadway	320
Perch River, south of, on road to Brownville; bridge over Perch River, water surface under	311
Perch River, 0.5 mile south of, on Depauville-Brownville road, opposite intersection of Limerick road; on northeast side of, on bowlder, cut point, marked "339"	337.54

LIMERICK, VIA CHAUMONT, TO THREEMILE BAY.

Limerick, main track New York Central Railroad, Cape Vincent branch; top of south rail	323.4
Limerick, 2 miles west of; north side of road, on bowlder, cut point, marked "330"	329.46
Limerick, 3 miles west of Guffins Creek; bridge, road on	270
Limerick, 3 miles west of Guffins Creek; bridge, water under	252
Limerick, 3 miles west of, about 300 feet from bridge, in deep gully west of Guffins Creek; on south side of road, on ledge of rock, cut point, marked "265"	263.79
Limerick, 3 miles west of; deep gully, bridge at, road on	252
Limerick, 3 miles west of; deep gully, bridge at, water under	248
Chaumont, about 0.75 mile east of; on north side of road, on bowlder, cut point, marked "298"	297.30
Chaumont; bridge over "Horse" Creek	282
Chaumont; bed of "Horse" Creek	273
Chaumont, at station; on south rail of south track New York Central Railroad	288.8
Chaumont, Main street, Hiram Copley's stone office building; in north face of buttress at northwest corner of, aluminum tablet, marked "295 CAPE VINCENT"	293.385
Chaumont, west of, on bridge over Chaumont River; road on center of	252
Chaumont, west of, on bridge over Chaumont River; water surface under	246
Chaumont, 0.3 mile west of; south side of road leading northerly, on bowlder, cut point, marked "275"	273.52
Chaumont, 2 miles west of; bridge over White Fish Creek	275
Chaumont, 2 miles west of; under bridge over White Fish Creek, water surface	270
Chaumont, 2.2 miles west of; 800 feet west of White Fish Creek bridge, south side of road, in bowlder, cut point, marked "293"	291.68

Feet.

Threemile Bay, 0.5 mile east of; south side of road, on boulder, cut point, marked "293"	291.57
Threemile Bay, Baptist Church; in southeast corner of foundation wall; aluminum tablet, marked "266 CAPE VINCENT"	264.504

THREEMILE BAY, VIA ST. LAWRENCE, TO CLAYTON.

Threemile Bay, about 1 mile north of; on east side of road just north of blacksmith shop, on boulder, cut point, marked "335"	334.15
Threemile Bay, 3 miles north of; near intersection of road leading easterly, bridge, point on each end of south abutment of, marked "317"	315.33
Threemile Bay, 3 miles north of; under bridge, water surface	312
Schoolhouse, district No. 11, Cape Vincent town; at intersection of road, south side of road, on ledge, marked "344"	342.55
Threemile Bay, 5 miles north of; at southeast corner of crossroads, at schoolhouse, district No. 6, town of Cape Vincent; on boulder, cut point, marked "332"	330.75
Threemile Bay, 6 miles north of, 100 feet south of intersection of roads, at cemetery; east side of road, on boulder, cut point, marked "351"	349.87
St. Lawrence, 1 mile south of; on west side of road intersection, in boulder, chiseled point	342.18
St. Lawrence, 225 feet north of crossroads; on east side of road, on large boulder, bronze tablet, marked "357 CAPE VINCENT"	356.219
St. Lawrence, 1.3 miles east of; at Comins Corners road intersection, on south side of road, on boulder, cut point, marked "334"	333.32
Comins Corners, 0.7 mile north of; on east side of road, on boulder of "bluff," cut point, marked "381"	380.36
Comins Corners, 1.5 miles north of; at head of French Creek, bridge, road on	329
Comins Corners, 1.8 miles north of; on east side of road, on boulder, cut point, marked "356"	355.12
Comins Corners, 2.3 miles north of; on north side of road, in front of schoolhouse, district No. 23; Clayton, on boulder, cut point, marked "358"	356.71
Clayton, about 3 miles south of Catholic cemetery at; northeast corner of horse block, in front of Jas. Delaney's residence	287.63
Clayton, 1.3 miles south of Catholic cemetery at; on east side of road, opposite house at summit, on boulder, cut point, marked "355"	353.86
Clayton, 1 mile south of Catholic cemetery at; on west side of road, at angle, on boulder, cut point, marked "315"	314
Clayton, James street, 10 feet north of south line of Catholic cemetery; on east side of, on boulder, cut point, marked "279"	278.13

CLAYTON, VIA LAFARGEVILLE, TO THERESA.

Clayton, the Barker (brick) building, on the north side of Water street; in limestone water table on the west side 1.85 feet northerly from the southwest corner of building, the said corner being 60 feet easterly from the point where the east line of James street, projected, would intersect the north line of Water street; aluminum tablet, marked "257 CAPE VINCENT"	256.175
Clayton, 1.30 miles from Catholic Church at; on west side of railroad, 45 feet south of center of highway crossing, point on boulder, marked "311"	310.20

	Feet.
Clayton, 1.9 miles from; iron bridge, on New York Central Railroad, northeast corner of top step, at north end of west abutment of, marked "327"	315.42
Clayton, 3.4 miles east of; north side of track, west side of highway crossing, iron-pipe culvert under railroad, top of spigot, marked "338"	336.56
Clayton, 3.70 miles from; north side of track, east side of highway crossing, iron-pipe culvert under railroad, top of spigot, marked "341"	339.52
Clayton, 4.3 miles from; north side of track and east side of highway, on line with east fence, 61 feet northerly from telegraph pole standing on east side of highway, point on small boulder marked "363"	362
Lafargeville, about $\frac{1}{2}$ mile west of; on the north side of railroad, spike in telegraph pole, marked "370"	368.67
Lafargeville; east side of highway crossing (Omar road) on south end of stone culvert under railroad, point, marked "376"	374.42
Lafargeville, Orleans Hotel (stone building); in southeast corner of, aluminum tablet, marked "381 CAPE VINCENT"	380.388
Lafargeville, 1.1 miles east of; on north side of railroad, stone box culvert, on northwest corner of coping, point, marked "393"	391.53
Lafargeville, 1.5 miles east of; on east side of highway and north side of railroad, on boulder, point, marked "398"	396.84
Lafargeville, 2 miles east of; on south side of railroad and 10 feet west of east highway, crossing fence, on boulder, point, marked "398"	396.98
Orleans Four Corners station; east side of highway and 70 feet south of south rail of track at, on boulder, point, marked "404"	402.56
Orleans station, 1 mile east of; on north side of railroad and west side of highway, point on boulder, marked "385"	383.85
Stroughs station, New York Central Railroad, 2 miles east of Orleans Corners; on north of railroad and west side of highway, spike in telephone pole, marked "335"	384.67
West Theresa, about 400 feet east of schoolhouse (District No. 9, Theresa); on north side of highway, on ledge, point, marked "390"	389.50
Theresa, 2 miles westerly from; at southeast corner of road intersection, on ledge, point, marked "410"	409.55
Theresa, 1.5 miles west of; on north side of highway about 20 feet west of west line of Military road intersection, on small boulder, point, marked "398"	397.70
Theresa, northwest corner of Main street and Redwood road; lower course of masonry of wall around grounds of residence at, point, marked "327"	326.88
Theresa, stone high school on Main street; in water tablet in north face and near northwest corner of belfry tower of, aluminum tablet, marked "376 CAPE VINCENT"	375.842
Theresa, Commercial street, bridge over Indian River	378
Theresa: crest of upper dam	374
Theresa: base of upper dam	354
Theresa: crest of lower dam	354
Theresa: base of and surface of water below lower dam	316

TERESA, VIA REDWOOD AND BROWNS CORNERS, TO ALEXANDRIA BAY.

Theresa station, 1.1 miles north of; on west side of New York Central Railroad where railroad and Indian River are closest together, on boulder, point, marked "320"

319.81

	Feet.
Theresa station, on New York Central Railroad, 1.125 miles north of; surface of water in Indian River	308
Theresa station, 2 miles north of; on west side of New York Central Railroad and east side of highway, at the most southerly point where the highway approaches and runs nearly parallel with the railroad, on boulder, point, marked "332"	331.65
Theresa station, at highway crossing 2.8 miles north of; on west side of New York Central Railroad and north side of highway, on boulder, point, marked "367"	367.33
Redwood, about 2.5 miles south of; on west side of New York Central Railroad and 450 feet north of Morgan's Cut overhead highway bridge, on boulder, point, marked "414"	413.60
Redwood, about 2 miles south of; on west side of New York Central Railroad, and south side of highway crossing, on boulder, point, marked "388"	387.80
Redwood, 2 miles south of and about 0.2 mile east of New York Central Railroad; crest of dam, Crystal Lake	376.9
Crystal Lake; surface of water (June 21, 1900)	375.7
Crystal Lake; base of dam	367.47
Redwood, New York Central Railroad bridge over Edmund Lake outlet	358
Redwood station, nearly opposite depot; on west side of New York Central Railroad, and north side of highway crossing, on boulder, point, marked "363"	368.32
Redwood, "The Dollinger House" (hotel); in east side and near northeast corner of foundation wall of, aluminum tablet, marked "365 CAPE VINCENT"	364.712
Redwood, on west side of Main street; bulkhead on outlet of Edmund (Aud) Lake, top plank	355.82
Redwood, on west side of Main street; at bulkhead of Edmund Lake, water surface, June 21, 1900	353.95
Redwood, on east side of Main street, Catlin Block: south end of, southwest corner of stone step, marked "357"	357.09
Redwood, Butterfield Lake; surface of water, June 21, 1900	376.74
Redwood, Butterfield Lake; on west side of highway at water edge, on boulder, point, marked "T. P. 279.40"	279.31
Redwood, 1 mile east of: Mill Site Lake, surface of water June 29, 1900	301.06
Redwood, 1 mile east of; at Mill Site Lake, on north side of highway, a few feet east of ditch crossing highway at foot of bluff or summit, on ledge, point, marked "T. P. 316.04 feet"	315.95
Redwood, 0.75 mile west of; on southwest corner of fork with roads to Plessis and Alexandria Bay, on ledge, point, marked "392"	391.98
Redwood, 1.5 miles west of; on south side of Alexandria Bay road and 150 feet west of road intersection northerly, on ledge, point, marked "334"	333.78
Redwood, 2.6 miles west of; on north side of road at angle in Alexandria Bay road, spike in telegraph pole, marked "362"	361.50
Redwood, 3 miles west of; on north side of Alexandria Bay road, and 60 feet west of road intersection at Browns Corners, on large boulder, point, marked "378"	377.74
Redwood, 4 miles west of; at southwest corner of cross roads intersection at Alexandria Center, on boulder, point, marked "361"	360.52
Redwood, 5.6 miles west of; on south side of road at road intersection northerly, on ledge, point, marked "321"	320.65
Redwood, 6 miles west of; on north side of road and 100 feet west of road intersection southerly, on boulder, point, marked "316"	315.75

	Feet.
Alexandria Bay, high school; in front of, on north side of road, on ledge, point, marked "278"	278.28
Alexandria Bay, Reformed Church; 29.9 feet north-northeast from the northwest corner of, in ledge in church lot, aluminum tablet, marked "283 CAPE VINCENT"	282.193

LAFARGEVILLE, VIA OMAR, TO FISHER'S LANDING.

Lafargeville, 1.38 miles north of; on east side of road and 100 feet north of road intersection easterly, on boulder, point, marked "395"	394.02
Lafargeville, 2.10 miles north of; on east side of road and 430 feet south of road intersection westerly, on large boulder, point, marked "430"	428.68
Omar, about 2 miles south of; on east side of road and on line with east and west road at De La Farge Crossroads, on small boulder, point, marked "358"	356.59
Omar, 0.5 mile south of; at northwest corner of road intersection westerly, top of monument, marked on adjacent boulder, "319"	317.44
Omar, 420 feet northerly from intersection of Fishers Landing and Collins Landing roads; in bed rock on sandstone ledge, west side of the Collins Landing road, and on a line with northerly side of the Omar schoolhouse and distant 51.62 feet from the northwest corner of the schoolhouse, bronze tablet, marked "297 CAPE VINCENT"	295.671
Omar, dam on Mullet Creek; crest of	286.54
Omar; foundation or base of dam	277.4
Omar, on Fishers Landing road, 1 mile west of; south side of road nearly in fence, on boulder, point, marked, on adjacent telephone pole, "278"	277.01
Fishers Landing, crossroads near, 72.6 feet from the south corner of Mrs. Tom's residence and 131 feet northwest of the west corner of a house on the opposite side of the road, top of a round-headed one-fourth inch brass bolt cemented into bed rock 6 inches below surface of ground. The letters "U.S.P.B.M. 29" are cut in the bed rock. This is a bench mark set by the Deep Waterway Commission	274.277

OMAR, VIA PLESSIS, TO BROWNS CORNERS.

Omar, 60 feet east of Mullet Creek; at northeast corner of road intersection, point on boulder or monument, marked "287"	285.59
Omar, on the "Gore road," 1.1 miles north of; on west side of road, on boulder, marked "330"	329.14
Omar, 2 miles from; on east side of road and 75 feet south of road intersection near schoolhouse district No. 23, Alexandria Township, point on ledge	379.08
Omar, 3 miles east of; on northeast corner of crossroads intersection, on ledge, point, marked "349"	347.96
Omar, 3.5 miles east of; on east side of road at intersection of roads near schoolhouse district No. 17, Alexandria town, on ledge, point, marked "413"	412.35
Plessis, 1.5 miles west of; on south side of road at road intersection, on ledge, point, marked "442"	441.18
Plessis Crossroads, 0.5 mile west of; on south side of road, at forks of road, on ledge, point, marked "432"	430.71
Plessis Crossroads; at store of Augsbury & Wilcox, at southwest corner of, on cross walk, point, marked on store "406"	404.61
Plessis, Flat Rock Creek; crest of dam	383
Plessis, Flat Rock Creek; base of dam	372.2
Plessis, 0.75 mile north of; at southwest corner of road intersection, on ledge, point, marked "370"	368.75

REDWOOD, VIA SOUTH HAMMOND, TO CHIPPEWA VILLAGE.

	Feet.
Redwood, 1.15 miles north of depot and 200 feet from private crossing to house in lot east of railroad; east side of railroad on ledge, point, marked "316"	315.05
Redwood, 2.5 miles north of railroad station: on west side of railroad and north side of railroad crossing, on large rock: point, marked "300"	298.36
Redwood, 2.75 miles north of, on Hammond road; at road intersection at northwest corner of barn opposite cheese factory, on stone: point, marked "286"	285.17
Redwood, 3 miles north of; on southwest corner of road at intersection, on boulder; point, marked "300"	298.57
Redwood, 4 miles north of; on west side of road and near bottom of north slope of high summit, on boulder; point, marked "330"	328.77
Redwood, 5.25 miles north of; on east side of road, on ledge; point, marked "305"	303.72
Redwood, 6.5 miles north of; on east side of road and 50 feet south of road intersection at Kings Corners, on boulder; point, marked "323"	321.72
South Hammond; 50 feet from intersection with road to Chippewa Village, on east side of road, on boulder: point, marked "356"	354.73
South Hammond, 1.1 miles west of; on road to Chippewa Village, on northerly side of road, on boulder: point, marked "371"	369.35
South Hammond Corners, about 2 miles west of; at schoolhouse, district No. 12, Hammond, at southeast corner of road intersection, on boulder; point, marked "365"	363.39
South Hammond Corners, 3 miles west of; on southerly side of road and 50 feet west of road intersection, on boulder: point, marked "326"	324.60
Chippewa Village; stone schoolhouse, district No. 11, 1 foot easterly from the northeast corner of, set in bed rock; bronze tablet, marked "289 CAPE VINCENT"	287.690
Chippewa Village; stone schoolhouse, district No. 11, north face of northeast corner; center punch mark of brass bolt, being permanent bench mark C.V. of the Deep Waterways Commission	290.620
Chippewa Village; St. Lawrence River, water surface, July 13, 1900	245.37

LIMERICK TO DEXTER.

Limerick, stone-arched bridge over Perch River at; on east end of south parapet wall of; point, marked "318"	316.99
Limerick; bridge over Perch River; roadway	316.6
Limerick; under bridge over Perch River; surface of water	302.1
Limerick 1 mile south of; on west side of road at west end of summit of hill, on ledge; cut point, marked "355"	353.65
Dexter, brick schoolhouse at; 2 feet easterly from northwest corner of main building, in limestone water table on northerly side of; aluminum tablet, marked "326 CAPE VINCENT"	324.365
Dexter; road on bridge over north branch of Black River	268
Dexter, crest of dam on north branch of Black River at	259.36
Dexter, crest of dam on south branch of Black River at	259.42

LIMERICK, VIA BROWNVILLE, TO WATERTOWN.

Limerick; 1 mile east of Perch River bridge, on south side of Brownville road, on boulder; point, marked "337"	335.73
Limerick; 2 miles east of Perch River bridge, near schoolhouse, district No. 18, Brownville, opposite road intersection and on north side of Brownville road, under the southeast corner of barn, on boulder; cut point, marked "318"	316.72

	Feet.
Limerick, 2.7 miles east of Perch River bridge; on north side of road, on boulder; point, marked "403"	402.01
Brownville, brick schoolhouse at 5 corners; midway of front face of building and 3.2 feet above surface of ground, in limestone foundation wall; bronze tablet, marked "355 CAPE VINCENT"	354.203
Brownville, at New York Central Railroad station; north rail	324.8
Brownville, 1.4 miles east of 5 corners in; on north side of "Military road" at stone house, on boulder; point, marked "363"	362.18
Brownville, 2 miles east of 5 corners in; on north side of "Military road" and at northeast corner of crossroads, on boulder; point, marked "380"	378.86
Watertown, 2.2 miles west of; at north end of pipe culvert under New York Central Railroad; point, marked "383"	381.73
Watertown, Main street; 100 feet east of Mohawk street, on top of back part of fire hydrant	397.96
Watertown, Arsenal street; State armory, front face, west end; aluminum tablet, marked "479 CAPE VINCENT"	478.027

BROWNVILLE, VIA SANFORD, TO FELTS MILLS.

Watertown, 3 miles north of; on east side of State road leading from Watertown to Gunns Corners, and 80 feet south of road intersection; at schoolhouse, on boulder; point, marked "430"	429.17
Watertown, 3.5 miles northeast of; on north side of road, 30 feet west of road intersection at end of east and west road, on ledge, point, marked "465." (Note. From this point, where the east and west road ends, the line runs for a mile cross fields to the Leray road, which it strikes at a point near the cemetery on that road 3.5 miles from Watertown)	464.01
Watertown, 3.5 miles northeast of; on south side of Sanford's Corners road, at intersection of road northerly, on small boulder; point, marked "412"	411.11
Sanford, 1 mile west of, New York Central Railroad station; in lot on south side of road, 20 feet from fence and opposite road intersection, on boulder; point, marked "440"	438.94
Sanford, at New York Central Railroad station; east rail	470.3
Sanford Station, 1 mile north of; at intersection of roads at Sanfords crossroads, on north west corner of limestone monument; point, marked "493"	492.53
Sanfords Crossroads, 1 mile east of; on south side of road and 80 feet west of crossroads intersection, on ledge; point, marked "509"	507.68
Sanfords Crossroads, 2.25 miles east of; on south side of road to Felts Mills, in front of foundation wall where house formerly stood; spike near root of maple tree, marked "580"	579.23
Felts Mills, 1 mile west of; on northwest corner of Grahams Crossroads, on back side of most westerly large pine tree; spike in root, marked "638"	637.39
Felts Mills, bridge over north branch of Black River at; on east end of south abutment (Island abutment); bronze tablet, marked "583 CAPE VINCENT"	582.361
Felt Mills; bridge over north branch of Black River, roadway on	584
Felts Mills; crest of dam on north branch of Black River	580.7
Felts Mills; base of dam on north branch of Black River at	571.4
Felts Mills; crest of dam on south branch of Black River at	583
Felts Mills; base of dam on south branch of Black River at	566.8

PENNSYLVANIA.

ERRATA IN PREVIOUS REPORTS.

A field error occurred in the levels published in the Appendix to the Twenty-first Annual Report, page 442, between West Brownsville Junction and Jacob Ferry. The elevations of these terminal points are corrected in this report.

In addition to above the following corrections are to be applied, which are derived from the latest adjustment of the United States Coast and Geodetic Survey:

In the Appendix to the Twenty-first Annual Report, pages 421 and 437:

	Corrections. Foot.
Elevation of tablet "635 Pittsburg 1899" at Erie	+0.322
(Note. The elevation published in the Coast Survey Report is 0.430 foot too high, due to a clerical error not affecting adjacent elevations in the same list.)	
Page 425: Elevation at West Penn Junction	+0.243
Pages 426 and 440: Elevation at Pittsburg	+0.191
Pages 440-442: List of elevations between Uniontown, page 440, and Lemont, page 442	+0.181
Page 442: Elevation at West Brownsville Junction	+0.192
Pages 442-443: List of elevations from Point Marion to Greensboro ..	+0.166
(Note. The above corrections are those applied to the precise line run from Erie, via Pittsburg, to Grafton, W. Va., at the selected points mentioned. The corrected elevations of tablets at these and intermediate points are published in the Coast Survey Report above mentioned.)	
Page 431. Elevation at Harrisburg	+0.148

ARMSTRONG AND INDIANA COUNTIES.

RURAL VALLEY QUADRANGLE.

The elevations published in the following list are based on and adjusted between two bench marks established in the course of precise leveling by the United States Geological Survey. One is a bronze tablet set in front face of northwest corner of public school, corner of McKain and Vine streets, Kittanning, marked "803 PITTSBURG 1899," and the other is a bronze tablet set in the north abutment, west side of iron bridge, 2 miles south of Rimerton, marked "820 PITTSBURG 1899." The elevations of these, as derived by the latest adjustment of the United States Coast and Geodetic Survey, in 1900, are accepted as 803.870 feet above mean sea level for Kittanning and 821.148 feet for Rimerton.

The leveling was executed under the direction of Mr. Frank Sutton, topographer, and by Mr. J. H. Wetzels, levelman, in 1900.

All bench marks are referred to an aluminum tablet set in foundation of Seventh Avenue Hotel at Pittsburg, marked "738 PITTSBURG 1899," the elevation of which is accepted as 738.718 feet above

mean sea level, and are stamped with the letters "PITTSBURG," in addition to the figures of elevation.

KITTANNING, VIA RURAL VALLEY AND DAYTON, TO MAHONING.

	Feet.
Kittanning, public school building: copper tablet, marked "803 PITTSBURG 1899".....	803.870
Kittanning, 1 mile east of; north side of road, nail in stump.....	999.79
Kittanning, 2 miles east of; south side of road, rock, chiseled mark □.....	1,145.92
Kittanning, 3 miles east of; south side of road; rock, chiseled mark.....	959.44
Kittanning, 3.33 miles east of; south side of road; pipe line, marked □.....	988.37
Kittanning, 3.75 miles east of, at road south; rock, chiseled mark □.....	986.02
Kittanning, 4.5 miles east of; 50 feet east of road northeast; north side of road; rock, chiseled mark □ "1026".....	1,026.56
Stone House Hotel, 0.75 mile west of; east side of road; rock, chiseled mark □.....	1,049.87
Kittanning, 6 miles east of; Stone House Hotel; in southeast corner stone; aluminum tablet, marked "1011 PITTSBURG".....	1,010.855
Stone House Hotel, 1 mile east of; bridge, south side of road by; rock, chiseled mark □.....	1,023.10
Stone House Hotel, 1.5 miles east of; at road; rock, chiseled mark □ "1116".....	1,115.77
Stone House Hotel, 2 miles east of; south side of road by small wooden bridge; rock, chiseled mark.....	1,070.33
Yatesboro, railroad at west end of; top of rail.....	1,121.1
Yatesboro, railroad crossing in; top of rail at.....	1,129.7
Yatesboro, 0.5 mile east of; south side of road; rock, chiseled mark □.....	1,124.30
Rural Valley, bridge in; southeast wing wall of; in coping stone; copper tablet, marked "1112 PITTSBURG".....	1,111.967
Rural Valley, 3 miles north of; 600 feet south of schoolhouse; rock, chiseled mark.....	1,185.60
Dayton, 2.75 miles southwest of; west side of road; rock, chiseled mark.....	1,399.38
Rural Valley, 8 miles north of; at road to west; nail in root of oak tree.....	1,275.87
Dayton, 1.5 miles west of Buffalo, Rochester and Pittsburg Railroad overhead bridge; on southeast: top of coping stone, chiseled mark □.....	1,275.82
Dayton, 0.5 mile west of; road crossing; top of north rail at.....	1,322.8
Dayton, 0.25 mile west of; road crossing; top of south rail at.....	1,328.2
Dayton, 900 feet west of station; Buffalo, Rochester and Pittsburg Railroad bridge over small stream; northwest wing wall of, on second coping stone; aluminum tablet, marked "1326 PITTSBURG".....	1,326.469
Eddyville, 2.5 miles south of; at crossroad; rock, chiseled mark □.....	1,257.25
Eddyville, 2 miles south of; iron bridge over Mahoning Creek; on southeast abutment; chiseled mark □ "1019".....	1,019.04
Eddyville, 1.5 miles south of; east side of road; rock, chiseled mark.....	1,200.88
Eddyville, iron bridge over Big Mahoning; on bridge seat, southeast wing wall, aluminum tablet, marked "992 PITTSBURG".....	992.635
Eddyville, 0.25 mile northeast of; iron bridge over Pine Run, floor of.....	999
Putneyville, 1 mile east of; bridge over Sugar Camp Run, floor of.....	954
Putneyville, iron bridge over Mahoning Creek at; northwest wing wall; coping stone, chiseled mark □.....	940.76
Putneyville, 1.5 miles west of; north side of road, under oak tree; rock, chiseled mark □.....	908.35
Putneyville, 3 miles west of; at cross rails, summit; rock, chiseled mark □.....	1,028.16
Macks Bridge (over Mahoning Creek, 6 miles east of Mahoning), 0.5 mile east of; south side of road; rock, chiseled mark.....	942.89

	Feet.
Mahoning, 6 miles east of; iron bridge over Mahoning Creek known as "Macks Bridge;" on southeast bridge seat; chiseled mark □	863.84
Mahoning, 4 miles east of; opposite mill by road north: nail in root of tree	841.95
Mahoning, 2 miles east of; iron bridge; southwest wing wall; coping stone, chiseled mark □	833.51
Mahoning, Allegheny Valley Railroad, opposite station at: top of rail	819.1
Rimerton, 2 miles south of; railroad bridge; northwest abutment; copper tablet, marked "820 PITTSBURG 1899"	821.148

INDIANA AND WESTMORELAND COUNTIES.

INDIANA, ELDERS RIDGE, AND LATROBE QUADRANGLES.

The elevations published in the following list are based upon various bench marks of the Pennsylvania Railroad on lines from West Penn Junction, via Blairsville intersection, to Braddock, the elevations of which are derived by applying various corrections to those listed in their publication of May 1, 1899, in conformity with the latest adjustment of the United States Coast and Geodetic Survey, in 1900, which makes the elevation as accepted for Blairsville intersection, bench mark Pennsylvania Railroad No. 47, a square cut on stone monument, 25 feet south of tool house, 1,120.113 feet above mean sea level.

The leveling was executed under the direction of Mr. Frank Sutton, topographer, by Mr. J. H. Wetzel, levelman, in 1900.

All bench marks are referred to an aluminum tablet set in foundation of Seventh Avenue Hotel at Pittsburg, marked "738 PITTSBURG 1899," the elevation of which is accepted as 738.718 feet above mean sea level, and are stamped with the letters "PITTSBURG" in addition to the figures of elevation.

SALTSBURG, VIA NEW ALEXANDRIA, TO LATROBE AND MILLWOOD.

	Feet.
Saltsburg, Pennsylvania Railroad passenger station; baggage-room door sill	855.96
Saltsburg, wooden covered bridge over Kiskiminitas River; on northeast wing wall, west end, aluminum tablet, marked "849 PITTSBURG"	848.959
New Alexandria, 2 miles north of; covered bridge over Loyahanna Creek; on north end of	935
New Alexandria, wooden covered bridge over Loyahanna Creek; southeast wing wall, on coping stone, tablet, marked "945 PITTSBURG"	945.368
New Alexandria, 500 feet north of Pennsylvania Railroad station: east side of road, nail in root of large oak tree, Pennsylvania Railroad bench mark No. 407	975.81
Georges Station, overhead bridge; on north pier of, aluminum tablet, marked "1199 PITTSBURG"	1,199.560
Latrobe, high school building; aluminum tablet	1,026.585
Millwood, overhead bridge; south abutment, on southwest coping stone, marked "1175 PITTSBURG"	1,175.668

BLAIRSVILLE, ALONG PENNSYLVANIA RAILROAD, TO HOMER CITY.

	Feet.
Blairsville, Pennsylvania Railroad passenger station; northeast corner of, on foundation offset, Pennsylvania Railroad bench mark No. 60, a square chiseled mark	1,012.298
Blairsville, Walnut street bridge: northeast wing wall of, on coping stone, aluminum tablet, marked "1003 PITTSBURG"	1,003.466
Blairsville, Maple street crossing: top of rail at	1,010.5
Turner Station, top of west rail at	1,100.5
Tunnel Station, 900 feet north of: in a cut, stone, chiseled mark	1,091.38
Smiths Station, road crossing: top of west rail at	1,074
Smiths Station, 1.5 miles north of, bridge over small stream: on north-west abutment of, chiseled mark	968.44
Blacklick Station, opposite: top of west rail	967
Blacklick Station, 900 feet north of; west side of railroad, rock, chiseled mark	972.44
Blacklick Station, 6 miles north of, railroad bridge over Twolick Creek; southwest corner of south abutment, on coping stone, bronze tablet, marked "981 PITTSBURG"	980.81.9
Blacklick Station, 1 mile north of: at road crossing, top of east rail	1,009
Rugh Station, opposite: top of west rail	1,028.9
Rugh Station, 5 miles north of; at road crossing, top of west rail	1,019
Graceton, 0.5 mile south of station; bridge over small stream; south-west wing wall, on coping stone, chiseled mark	1,020.76
South Graceton, road crossing: top of rail at	1,063
Graceton, opposite station; top of rail	1,060.4
Graceton, 1.8 miles north of station: small culvert, top stone, chiseled mark	1,042.59
Homer City, 5 miles south of; small culvert, northeast coping stone, chiseled mark	1,014.75
Homer City, 600 feet south of station; bridge over Yellow Creek: north-west wing wall, on coping stone, aluminum tablet, marked "1019 PITTSBURG"	1,019.482

HOMER CITY, ALONG PENNSYLVANIA RAILROAD, TO INDIANA.

Homer City, opposite station: top of rail	1,023
Homer City, 1 mile north of; small culvert, chiseled mark	1,047.47
Twolicks, 2 miles south of station; bridge over Twolick Creek; north-west wing wall, coping stone, chiseled mark	1,048.51
Twolicks, opposite station; top of rail	1,057.8
Twolicks, 1 mile north of; stone bridge, northeast coping stone, chiseled mark	1,109.66
Twolicks, 1.1 miles north of; stone bridge No. 9, northwest coping stone, chiseled mark	1,120
Twolicks, 1.6 miles north of; 3 miles south of Indiana; bridge, top of rail	1,128.1
Reed Station, 900 feet south of; on a cut, on west side of railroad, stone, chiseled mark	1,137.50
Reed Station, 600 feet south of; at road crossing, top of rail	1,145.9
Reed Station, opposite: top of west rail	1,149.5
Reed Station, 600 feet north of; at road crossing, top of rail	1,163
Normal, 1 mile south of; bridge, northwest wing wall, chiseled mark □	1,228.28
Indiana, 1.3 miles south of; small bridge, northwest wing wall, chiseled mark	1,235.75

	Feet.
Indiana, Normal School campus; south meridian stone	1,292.90
Indiana, Normal School campus, on north meridian stone in: copper tablet, marked "1299 PITTSBURG 1900"	1,299.412
INDIANA, VIA CREEKSID, GAIBLETON, PENN RUN, AND BRUSH VALLEY, TO HOMER CITY.	
Indiana, School street crossing; top of rail	1,302
Indiana, Church street crossing; top of rail	1,307.6
Indiana, opposite station; top of west rail	1,309.7
Indiana, 75 feet west of station; stone set in street, chiseled mark	1,311.59
Indiana, 1.7 miles northwest; south side of road, nail in root of chestnut tree	1,433.07
Indiana, 2 miles northwest of; summit, on root of large double chestnut tree, paint marked	1,498.19
Indiana, 2.25 miles west of; on west side of road, on root of oak tree, "No. 24" made by coal prospectors	1,390.49
Indiana, 2.5 miles northwest of; nail in root of oak tree	1,354.49
Indiana, 2.7 miles northwest of; on east side of road, nail in root of large oak tree	1,219
Indiana, 4 miles northwest of; nail in telephone pole	1,130.54
Newville, 1 mile southwest of; iron bridge over Crooked Creek, south- west wing wall, coping stone, chiseled mark	1,021.19
Newville, M. E. church, entrance to: in southwest corner stone, copper tablet, marked "1034 PITTSBURG"	1,034.068
Newville, 1.75 miles north of; covered bridge, northeast abutment, coping stone, chiseled mark	1,047.15
Chambersville, 1 mile south of; covered bridge over Crooked Creek, southeast wing wall, coping stone, chiseled mark	1,048.10
Chambersville, 300 feet south of post-office; on east side of road, rock, chiseled mark	1,073.35
Chambersville, 1.24 miles north of; 500 feet south of schoolhouse, at road leading west, nail in root of oak tree	1,065.54
Gaibleton, 1 mile south of post-office; east side of road, rock, chiseled mark	1,151.32
Gaibleton, 650 feet south of post-office; double-arched stone bridge, west side of road, on coping stone, north arch, aluminum tablet, marked "1087 PITTSBURG"	1,086.778
Kinterburg, in crossroad at; rock, chiseled mark	1,104.95
Tanoma, 0.5 mile west of post-office; south side of road, rock, chiseled mark	1,140.91
Tanoma, Tanoma House; bay window, in top foundation stone of, alu- minum tablet, marked "1132 PITTSBURG"	1,132.615
Tanoma, 1.5 miles southeast of; at crossroad, stone, chiseled mark	1,173.44
Tanoma, 2.25 miles south of; oak tree standing in road, nail in root of	1,401.88
Tanoma, 4 miles east of; 30 feet north of schoolhouse, on west side of road, rock, chiseled mark	1,285.41
Tanoma, 4.25 miles east of; covered bridge, southeast wing wall, coping stone, chiseled mark	1,192.00
Penn Run, 2 miles west of post-office; south side of road, rock, chiseled mark	1,265.86
Penn Run, 1.75 miles west of post-office; bridge over Penn Run	1,247
Penn Run, 1 mile west of post-office; on rock under wild cherry tree, chiseled mark	1,404.85

	Feet.
Penn Run, Presbyterian Church, on lower stone step of; bronze tablet, marked "1475 PITTSBURG"	1,474.968
Pikes Peak, 1.5 miles southwest of; north side of road, rock, chiseled mark	1,423.50
Pikes Peak, 2.2 miles southwest; bridge over Yellow Creek	1,262
Brush Valley, 2.5 miles northeast of post-office; south side of road, by red house, stone, chiseled mark	1,385.69
Brush Valley, 300 feet northeast of post-office; nail in root of oak tree ..	1,403.86
Brush Valley, Union House, entrance to; in south end of top stone step of, bronze tablet, marked "1448 PITTSBURG"	1,448.657
Brush Valley, 1.5 miles west of, nearly opposite chestnut tree on north side of road; south side of road, rock, chiseled mark	1,586.25
Brush Valley, 3 miles west of; south side of road, by log house, rock, chiseled mark	1,506.12
Homer City, 2.25 miles east of; north side of road, under large white oak, rock, chiseled mark	1,527.23
Homer City, 2 miles east of; on west side of road, rock, chiseled mark ..	1,397.05
Homer City, opposite schoolhouse; corner of street, stone, chiseled mark	1,062.32

CUMMINS BRIDGE, VIA SHELOCTA AND KENT, TO LIVERMORE.

Newville, 1 mile southwest of; iron bridge over Crooked Creek, south-west wing wall, coping stone, chiseled mark	1,021.19
Shelocta, 3.5 miles east of; south side of road, nail in root of oak tree ..	1,052.79
Shelocta, 2.75 miles east of; under clump of oak trees, rock, chiseled mark	1,055.19
Shelocta, 1.25 miles east of; south side of road, near barn and nearly opposite house on north side of road, rock, chiseled mark	1,014.04
Shelocta, 0.25 mile east of; at intersection of roads, near covered bridge, rock, chiseled mark	994.84
Shelocta, covered bridge over Crooked Creek at west end of; northeast wing wall of, coping stone, bronze tablet, marked "992 PITTSBURG" ..	991.804
Shelocta, 1.2 miles west of; south side of road, rock, chiseled mark	1,046.81
Shelocta, 2.5 miles south of; opposite white house, under clump of locust trees, rock, chiseled mark	1,125.44
Shelocta, 2.75 miles south of; west side of road, opposite hickory tree, rock, chiseled mark	1,165.67
Parkwood, 1,000 feet north of; west side of road, rock, chiseled mark ...	1,331.81
Parkwood, 1.75 miles south of; bridge over Blacklegs Creek	1,082
Kent, 3 miles north of post-office; W. L. Neal's brick residence, on upper foundation stone; aluminum tablet, marked "1167 PITTSBURG" ..	1,167.488
Kent, 2 miles north of post-office; Clark Neal's residence, in front of, on top of stepping block, chiseled mark	1,139.37
Kent, 0.25 mile north of post-office; by old barn, rock, chiseled mark ...	1,071.82
Kent, at intersection of roads at west end of; opposite blacksmith shop, rock, chiseled mark	1,055.88
Kent, 0.8 mile south of post-office; on east side of road opposite sawmill, rock, chiseled mark	1,039.25
Kent, 2 miles south of post-office; James M. Jack's brick residence, on stone doorstep, bronze tablet, marked "1029 PITTSBURG"	1,028.734
Kent, 3.5 miles south of post-office; bridge over Altman Run	982
Kent, 4 miles south of post-office; at intersection with road to east, stone, chiseled mark	980.50

	Feet.
Livermore, 0.25 mile north of; at intersection of roads, rock, chiseled mark.....	933.28
Livermore, at north side of; covered bridge over Conemaugh River, north end of.....	905
Livermore, 0.2 mile east of; overhead bridge, in southeast wing wall, copper bolt, Pennsylvania Railroad bench mark No. 56.....	933.890
Livermore, 0.2 mile east of; overhead bridge, southeast wing wall of, on coping stone, aluminum tablet, marked "934 PITTSBURG".....	933.852

WASHINGTON, WESTMORELAND, GREENE, AND FAYETTE COUNTIES.

BROWNSVILLE, CONNELLSVILLE, WAYNESBURG, MASONTOWN, UNIONTOWN, AND MORGANTOWN QUADRANGLES.

The elevations published in the following list are based on and adjusted between bench marks established in the course of precise leveling by this Bureau at Point Marion, Uniontown, West Brownsville Junction, and Baird flag station, Pennsylvania. The elevations of these are accepted as corrected by the latest adjustment of the United States Coast and Geodetic Survey. (See Report for 1898-99 of that Bureau, Appendix No. 8.)

Elevations published in the Twenty-first Annual Report of this Bureau, on pages 440-443, are corrected as follows: To those listed in circuit from Uniontown via Farmington and Lamont to Uniontown, add 0.181 foot; to those between Point Marion and Greensboro, add 0.166 foot; in list Brownsville to Jacobs Ferry, add 0.192 foot to the elevation there given for the tablet at West Brownsville Junction, but the elevation at Jacobs Ferry is corrected by leveling of the United States Engineer Corps from West Brownsville Junction, raising it 0.445 foot, and intermediate elevations are discarded.

The leveling was executed under the direction of Mr. Frank Sutton, topographer, and by Messrs. William Crennell and J. H. Wetzel, levelmen, in 1899, and by the latter alone in 1900.

All bench marks are referred to an aluminum tablet in the foundation of the Seventh Avenue Hotel at Pittsburg, marked "738 PITTSBURG 1899," the elevation of which is accepted as 738.718 feet above mean sea level, and are stamped with the letters "PITTSBURG" in addition to their figures of elevation.

EAST RIVERSIDE, VIA KHEDIVE, CLARKSVILLE, WAYNESBURG, DAVISTOWN, TO POINT MARION.

	Feet.
Jacobs Ferry, East Riverside mill; on southwest corner of foundation, bronze tablet, marked "792 PITTSBURG".....	792.894
Carmichaels, schoolhouse; on stone step of entrance of, aluminum tablet, marked "1004 PITTSBURG".....	1,004.638
Carmichaels, 2 miles west of, covered bridge over Muddy Creek; on southwest wall of.....	982.11
Carmichaels, 2.5 miles west of; opposite brick and white house, on stone water trough.....	1,005.32

	Feet.
Khediye, residence of Mrs. Sarah Yoder, in west end of: on foundation stone under bay window, aluminum tablet, marked "1013 PITTSBURG"	1,013.671
Jefferson, 0.5 mile north of, covered bridge; on southwest wing wall of	851.84
Clarksville, 1 mile south of, covered bridge over Tenmile Creek; northwest wing wall, on coping stone (next to bridge), bronze tablet, marked "814 PITTSBURG"	814.698
Ruffcreek, wooden dwelling house of John Breston: northeast corner, in upper foundation stone, bronze tablet, marked "999 PITTSBURG"	998.370
Waynesburg, court-house; northwest corner of stone veranda, bronze tablet, marked "1035 PITTSBURG"	1,035.032
Waynesburg, east end of; covered bridge over Tenmile Creek, on southeast wing wall	935.46
Waynesburg, 2 miles south of, bridge; on rock at	969.36
Delight, iron bridge; floor of	1,037.
Newtown, 3 miles west of; near small bridge at road south by school-house, rock, chisel marked	1,084.54
Newtown, 2 miles south of, covered bridge, on southwest wing wall, chisel mark	1,048.27
Newtown, iron bridge; on northeast wing wall of, 2 coping stones from bridge, bronze tablet, marked "1010 PITTSBURG"	1,009.923
Newtown, 1.5 miles east of, covered bridge, on northwest wing wall	998.04
Newtown, 2 miles east of, iron bridge: southeast wing wall	992.03
Newtown, 2.25 miles east of, curved bridge; coping stone, chisel marked	990.11
Davistown, middle bridge in (wooden); northeast wing wall of, in ledge of rocks at end of, bronze tablet, marked "932 PITTSBURG"	932.458
Davistown, 1.5 miles east of, iron bridge over Dunkard Creek; on northwest wing wall, chisel mark	872.06
Taylorstown, 0.5 mile west of, bridge; on northwest wing wall	849.1
Point Marion, 3.1 miles north of; bridge over Dunkard Creek, at junction with Monongahela River, west side of south abutment, stone, chisel marked	800.11

POINT MARION, VIA CHEATHAVEN, TO LAUREL IRON WORKS, W. VA.

Cheat River Passing, 150 feet south of, on east side of railroad; chisel mark on rock	816.39
Cheathaven, 0.7 mile south of: at small wooden bridge across road, on sandstone on east side of road, chisel mark	801.76
Cheathaven, 1 mile south of; iron bridge over Ruble Run, on southeast wing wall of, chisel mark	807.16
Laurel Iron Works, West Virginia, 150 feet east of; aluminum tablet on southeast bridge seat, marked "1055 PITTSBURG"	1,055.019

GIBSON, VIA BROADFORD, DAWSON, AND WEST NEWTON, TO BAIRDS FLAG STATION.

Gibson station, 0.1 mile southeast of; railroad bridge over Youghiogheny River, on northwest wing wall of, chisel mark	914.46
Connellsville, foot of Main street: on top stone of pier of iron bridge	884.98
Connellsville, Main street, between Baltimore and Ohio Railroad and river; wagon bridge over Youghiogheny River at, on top stone of south end of pier of, aluminum tablet, marked "885 PITTSBURG"	885.045

	Feet.
Connellsville, south end of Baltimore and Ohio depot at; at intersection of main track and switch, chisel mark on curbstone.....	882.23
Broadford, house No. 20, near coke ovens, on southeast corner stone of, chisel mark	857.66
Dawson, First National Bank; aluminum tablet in face of entrance to, marked "851 PITTSBURG".....	851.661
Dawson, 0.5 mile north of; on northeast wall of culvert over stream...	846.29
Dawson, 2 miles north of; northeast corner of abutment of bridge....	838.13
Layton station, 600 feet south of, at north end of Fayette brickworks; in stone on north side of railroad arch culvert, aluminum tablet, marked "806 PITTSBURG".....	805.549
Jacobs Creek station, 1,200 feet south of; railroad bridge over Jacobs Creek, on southwest corner of south abutment; aluminum tablet, marked "782 PITTSBURG".....	781.952
Smithson station, 600 feet south of; on north side of railroad on rock...	777.21
Port Royal, United States bond house, No. 2; south end of, on door sill...	776.39
Port Royal, 2.6 miles west of; on east side of railroad, 1,590 feet north of tank No. 14, on rock.....	769.208
West Newton, wagon bridge over Youghiogheny River at; north side of east end of wing wall of, aluminum tablet, marked "771 PITTSBURG".....	771.123
West Newton, 1.2 miles west of; on coping stone of bridge	829.63
West Newton, 4 miles west of; on coping stone of bridge	983.52
Gambles, James Torren's brick house at (formerly Gambles's post-office), west side of front entrance to, on stone in retaining wall; bronze tablet, marked "1134 PITTSBURG".....	1,134.180
Baird Flag station, 150 feet southwest of station signpost at stone arch culvert; in second step below coping stone, north side of track, 4.8 feet below top rail, bronze tablet, marked "755 PITTSBURG 1899".....	755.269

BROADFORD, VIA SCOTTTDALE, MOUNT PLEASANT, AND HUNKERS, TO
WEST NEWTON.

Broadford, 0.7 mile north of; railroad bridge on southeast coping of, chisel mark	901.20
Broadford, 1.8 miles north of; bridge No. 804, on coping stone southeast abutment of, chisel mark.....	951.92
Scottdale, H. C. Frick Coke Company's building; in second stone below water table, at left side of entrance, aluminum tablet, marked "1040, PITTSBURG".....	1,039.942
Scottdale, 0.7 mile north of; small bridge, on coping stone northeast abutment of; chisel mark	1,026.46
Pershing station; bridge at; on northeast corner abutment of; chisel mark.....	1,039.63
Mount Pleasant; south side Main street; 950 feet northwest of Pennsylvania Railroad; on curbstone; chisel mark.....	1,104.90
Mount Pleasant; Farmers and Merchants' National Bank, left side at entrance to, on foundation stone; aluminum tablet marked "1222 PITTSBURG".....	1,222.851
Mount Pleasant, south side of Main street, at Stephenson's alley, on curb; chisel mark	1,257.81
Tarrs station; west side railroad and south side of wagon road, on rock; chisel mark	1,087.69
Ruffsedale station; north side of railroad at road crossing at; on rock; chisel mark.....	1,042.61

	Feet.
Hunkers station, railroad bridge at; on southwest corner of abutment of; chisel mark	940.19
Hunkers station, 150 feet south of; railroad bridge, west end of south abutment; on coping stone; bronze tablet marked "939 PITTSBURG"	939.62
Ruffsedale, 0.7 mile west of; house at foot of hill; on north side of road, on rock	1,159.15
Mendon, east end of; northwest corner of brick house owned by J. F. Grove; in second stone from top of foundation; bronze tablet marked "1104 PITTSBURG"	1,104.585
Mendon, north side of road at near log house; chisel mark on rock	1,154.15
Turkeytown, 0.1 mile east of; north side of road; chisel mark on rock ..	1,143
West Newton, summit east of; north side of road at; chisel mark on rock	1,038.06

FRANKLIN COUNTY.

CARLISLE QUADRANGLE.

The elevations published in the following list are based directly upon a bench mark of the United States Coast and Geodetic Survey at Carlisle, Pa. This is marked by the letter "M" cut on the base of the column at the west side of the jail entrance. (See p. 560, Appendix No. 8, on hypsometry, of their report for 1898-99, published in 1900.) The elevation of this bench mark is accepted as 473.234 feet above mean sea level.

The datum to which this leveling is referred is an aluminum tablet of the United States Geological Survey placed in the State library at Harrisburg, marked "364 HARRISBURG, 1899," the elevation of which is accepted as 363.961 feet above mean sea level, as corrected by the United States Coast and Geodetic Survey in 1900. This elevation is 0.148 feet higher than the elevation accepted for this bench mark in the Appendix to the Twenty-first Annual Report of the Director of this Survey, page 431.

The leveling was executed under the general direction of Mr. Robert D. Cummin, topographer, by Mr. F. M. Taylor, levelman.

The bench marks being referred to Harrisburg as datum are stamped with the letters "HARRISBURG" in addition to their figures of elevation.

CARLISLE, VIA MOUNT HOLLY, TO IDAVILLE.

	Feet.
Carlisle, 4 miles south of, at intersection of crossroads; at south corner of Craighead's yard, stone, paint marked	533.70
Mount Holly Springs, Philadelphia and Reading Railroad station; in southeast corner of, bronze tablet, marked "556 HARRISBURG 1900"	555.566
Hunters Run, station, 600 feet south of; spike in butt of telegraph pole.	627.45
Zion Church; west side of railroad track, southeast of intersection of roads, point of rock	856.55
Starners station, road crossing at; east side of track, bolt in butt of telegraph pole	981.20

	Feet.
Starners station, 1.5 miles south of, 1 mile north of Idaville station; between trestles Nos. 1 and 2, spike in stump.....	904.92
IDAVILLE, VIA YORK SPRINGS AND DILLSBURG, TO MECHANICSBURG.	
Idaville, P. L. Houck's house; in east side of, bronze tablet, marked "805 HARRISBURG 1900"	805.101
Gargol, at intersection of crossroads; three nails in root of white oak..	792.69
York Springs, brick hall at; in southwest corner of, bronze tablet, marked "607 HARRISBURG 1900"	606.599
Deardorff's Mills, at intersection of crossroads at; spike in root of locust tree	512.64
Bermudian, A. L. Powell's house; northeast corner of top stone step of, chisel marked +	500.32
Big Dam, crossroads at; corner stone at southeast corner of, chisel marked □	489.51
Franklintown, United Brethren Church; south end of step, top of iron support of foot scraper.....	696.65
Dillsburg, brick schoolhouse; in southwest corner of, bronze tablet, marked "613 HARRISBURG 1900"	613.197
Williams Grove, station, 500 feet north of; on east side of railroad track, point on stone	439.12
Mechanicsburg, 1 mile south of, bridge at post No. D-10-3; spike in top of	429.04
Mechanicsburg, brick high school; west side of, at right of front entrance, bronze tablet, marked "456 HARRISBURG 1900"	455.855

MECHANICSBURG TO CARLISLE.

Hogestown, 0.5 mile west of; spike in butt of telephone pole.....	425.84
New Kingston, Dr. Faulk's house; curbstone in front of, chisel marked +	453.48
Middlesex, east end of; spike in stump of telegraph pole.....	425.30
Carlisle, 1 mile east of; opposite Indian school; south side of pike, point of rock.....	452.79

MOUNT HOLLY TO WILLIAMS GROVE.

Boiling Springs, 0.5 miles west of, opposite whistle post; spike in butt of telephone pole	489.66
Lidighs station, 0.33 mile east of; bridge, right side of track, capstone of abutment of, chisel marked	451.84

MERCERSBURG AND CHAMBERSBURG QUADRANGLES.

The elevations published in the following list are based directly upon two bench marks of the United States Coast and Geodetic Survey. One at Chambersburg, Pa., marked by the letter "N" cut on pedestal at base of the northernmost pillar of the front of the courthouse, and one at Greencastle, designated XXXI, and marked by the center of a cross cut in a stone in the front wall of the Cumberland Valley Railroad station. The elevation of the former has been accepted as 620.497 feet above mean sea level, and that of the latter 588.462 feet. These are the adjusted elevations from Appendix

No. 8, of the United States Coast and Geodetic Survey Report on Hypsometry for 1898-99, published in 1900.

The datum to which this work is referred is an aluminum tablet of the United States Geodetic Survey placed in the State Library at Harrisburg, marked "364 HARRISBURG 1899." The elevation of which is accepted as 363.961 feet above mean sea level, as corrected by the United States Coast and Geodetic Survey in 1900. This elevation is 0.148 foot higher than the elevation accepted for this bench mark in the Appendix to the Twenty-first Annual Report of the Director of this Survey, page 431.

The leveling was executed under the general direction of Mr. Robert D. Cummin, topographer, by Mr. F. M. Taylor, levelman.

The bench marks being referred to Harrisburg as datum are stamped with the letters "HARRISBURG" in addition to their figures of elevation.

CHAMBERSBURG TO FAYETTEVILLE.

	Feet.
Chambersburg, 1.25 miles east of; 500 feet west of toll gate, on north side of pike, rock, chisel marked +	651.05
Chambersburg, 3 miles east of; top of milestone, chisel marked +	735.03
Chambersburg, 4 miles east of; milestone, hole drilled in top of	766.80
Fayetteville, broken milestone, in; notch cut in north side of	789.82
Fayetteville, Union Brick Church; in foundation stone east side of, bronze tablet, marked "792 HARRISBURG 1900"	791.736

CHAMBERSBURG, VIA SCOTLAND AND GREENVILLE, TO WEST FAYETTEVILLE.

Chambersburg, 3.75 miles northeast of; 2.5 miles north of Chambersburg and Gettysburg pike, 50 feet west of road and 500 feet south of intersection of roads, in field, rock, point marked +	742.89
Scotland, bridge over Conococheague Creek between Soldiers' Orphans Industrial School and Scotland Station; southeast wing wall of, capstone, chisel marked +	670.71
Greenville, brick schoolhouse; in southeast corner stone of, bronze tablet, marked "678 HARRISBURG 1900"	677.985
Greenville, west side of pike; in main road crossing, stone, chisel marked +	675.32
Woodstock, blacksmith shop, 30 feet south of; bolt in top of stump	726.06

CHAMBERSBURG TO LOUDON.

Chambersburg, 1 mile west of; at junction with road to right, spike in telegraph pole	624.42
Chambersburg, 2 miles west of; spike in telegraph pole with signboard	733.06
Chambersburg, 3 miles west of; spike in telegraph pole with signboard	692.06
Chambersburg, 4 miles west of; spike in telegraph pole with signboard	597.37
Chambersburg, 6 miles west of; bolt in telegraph pole with signboard	574.07
St. Thomas, 0.5 mile east of; signboard "7 miles to Chambersburg," harrow tooth in telegraph pole	671.16
St. Thomas, brick hotel; in northeast corner stone of, bronze tablet, marked "645 HARRISBURG 1900"	644.672
St. Thomas, 1 mile west of; signboard "9 miles to Chambersburg," harrow tooth in telegraph pole	606.26

	Feet.
Loudon, 4 miles east of; Mount Parnell schoolhouse, black brick between doors, chisel marked +	690.33
Loudon, 3 miles east of; on north side of pike, signboard "11 miles to Chambersburg," bolt in telegraph pole.....	777.00

LOUDON TO RICHMOND.

Loudon, crossing; west side of track and south side of turnpike, signal support, spike in top of	645.18
Loudon, 1.25 miles north of; culvert, capstone east side of, chisel marked +	616.96
Loudon, 2.75 miles north of; west side of railroad track, spike in telegraph pole.....	648.31
Richmond, schoolhouse; in southeast corner stone in foundation of, bronze tablet, marked "676 HARRISBURG 1900"	676.169

LOUDON, VIA MERCERSBURG JUNCTION, TO MERCERSBURG.

Loudon, 0.5 mile south of; crossing, east side of railroad track and north side of public road, stone, chisel marked +	613.14
Loudon, 1.5 miles south of; on east side of railroad track, stone, chisel marked +	628.69
Mercersburg, 2.5 miles northeast of; railroad bridge over west branch of Conococheague Creek, at southeast corner of, capstone, chisel marked □	536.78
Mercersburg, 2.25 miles north of; at road crossing about 1,000 feet south of Mercersburg Junction, on east side of railroad track, oval rock, chisel marked +	552.13
Mercersburg, 1 mile north of; South Penn Railroad tracks, on west side of, at bottom of small cut, on top of sharp rock, chisel marked +	552.71

MERCERSBURG TO COVE GAP.

Mercersburg, 1.25 miles west of; 300 feet west of Andrew Shelly's brick house, south side of pike, iron in telegraph pole.....	649.97
Mercersburg, 1.75 miles west of; Fruit Hill schoolhouse, in foundation, near northwest corner of, stone, chisel marked +	705.05
Mercersburg, 3 miles west of; Cove Gap roller mills, northeast corner stone of, chisel marked +	775.93

MERCERSBURG, VIA UPTON, TO GREENCASTLE.

Mercersburg, Mercersburg Academy; dining hall, in northwest corner of, aluminum tablet, marked "595 HARRISBURG 1900"	594.845
Mercersburg, mansion house; stone horse block in front of, on top step of, chisel marked ⊕	575.66
Mercersburg, 1 mile east of; tollgate house, stone in front of, chisel marked +	557.85
Mercersburg, 3 miles east of; about 1,000 feet east of stone bridge over west branch of Conococheague, on north side of pike, stone, chisel marked +	541.57
Upton, 1.5 miles west of; opposite Garnes blacksmith shop, on north side of pike, iron in telephone pole	553.94
Upton, 0.87 mile west of; at intersection of road running south to Welsh Run, stone, chisel marked +	548.74
Upton, Dr. Noble's office; on south side of pike, stone horse block in front of, chisel marked +	625.09

	Feet.
Upton, brick schoolhouse; in southeast corner stone of, aluminum tablet, marked "620 HARRISBURG 1900"	619.644
Greencastle, 2.5 miles west of; about 100 feet west of shoemaker's house, on south side of pike, on capstone of small culvert, chisel marked □ ..	549.22
Greencastle, 1.75 miles west of; at intersection of road north to Williamson, three nails in telephone pole	543.81
Greencastle, 1.12 miles west of; tollgate house, stone step of, chisel marked +	457.93
Greencastle, 1 mile west of; northwest corner of Greencastle cemetery, north side of pike, stone, chisel marked +	529.00
Greencastle, 0.75 mile west of; schoolhouse at corner of roads, stone in foundation of, chisel marked +	550.65

GREENCASCADE, VIA MARION JUNCTION, TO MERCERSBURG JUNCTION.

Greencastle, 1.5 miles north of; Charles Hessler's yard, stone horse block at corner of, chisel marked +	565.61
Marion Junction, 3 miles south of, and 500 feet south of Kauffman's Station; west side of road, stone, chisel marked +	588.71
Marion Junction, 1 mile west of; Cumberland Valley Railroad milepost No. 60, top of iron support of standard southwest of	578.06
Stone Bridge Station, 1.13 miles east of; on left bank of East Conococheague Creek, southeast corner of bridge wall, top stone of, chisel marked +	509.88
Stone Bridge Station, at crossing; south side of railroad tracks, railroad spike in butt of willow tree	495.61
Williamson, station, 0.12 mile south of; railroad bridge over Back Creek, at northwest corner of wall of, stone, chisel marked +	490.43
Rockdale, station, 0.12 mile east of; culvert, west wall of, north capstone of, chisel marked +	517.07
Lehmaster, 1 mile east of, near east end of grove, on north side of railroad track, railroad spike in butt of white-oak tree	566.26

GREENCASCADE TO WAYNESBORO.

Greencastle, 1 mile east of; brick pavement from house of Mr. Shelly to pike, west side of, top of pointed marker stone	678.84
Zullinger, Louis Hovis's house; stone horse block in front of, chisel marked +	748.36

FAYETTEVILLE TO WAYNESBORO.

East Fayetteville, station; 20 feet northwest of railroad crossing, bolt in root of oak tree	772.65
Fayetteville, 3.25 miles south of; at intersection of roads, point of rock, paint marked +	838.46
Mount Alto, Funkstown or Altondale; M. E. Church, entrance to, in left side of stone step, aluminum tablet, marked "848 HARRISBURG 1900"	847.459
Mount Alto, 1.12 miles south of; Knepper pump house, south end of, stone doorsill, chisel marked ⊕	786.08
Waynesboro, 1.5 miles north of; culvert crossing creek, east capstone of, chisel marked +	656.08
Waynesboro, Cumberland Valley Railroad station; east entrance to, top of stone support under middle porch post, chisel marked +	713.86
Waynesboro, Western Maryland Railroad station; in stone in north foundation of, aluminum tablet, marked "712 HARRISBURG 1900" ..	711.879

LEHIGH, LEBANON, BERKS, AND LANCASTER COUNTIES.

WERNERSVILLE AND SLATINGTON QUADRANGLES.

The following elevations are based on an aluminum tablet placed in front face of State library at Harrisburg, Pa. The height of this is determined from mean sea level by precise levels of the United States Coast and Geodetic Survey, the Pennsylvania Railroad, and the United States Geological Survey, the connection having been made by the latter organization. The elevation of this datum is accepted as 363.961 feet above mean sea level. The immediate elevations on which the leveling reported upon herewith is based are bench marks of the United States Coast and Geodetic Survey transcontinental line as published in their latest adjustment, Report of 1898-99, Appendix 8.

The leveling was done under the direction of Mr. Hersey Munroe, topographer, by Messrs. B. E. White and Hargraves Wood, levelmen.

All bench marks dependent upon this datum are marked with the letters "HARRISBURG" in addition to the figures of elevation.

MACUNGIE, VIA FOGELSVILLE, CLAUSVILLE, AND NEW TRIPOLI, TO
SLATINGTON.

	Feet.
Macungie station, 0.5 mile west of; cut on top of stone of the middle of the south side of Philadelphia and Reading Railroad bridge over small run, marked "XXII B. □ M. 1881" U.S.C.G.S.B.M.	383.809
Macungie, 0.75 mile west of; top of rail at crossing Philadelphia and Reading Railroad	389.2
Macungie, 1.35 miles northwest of; chisel mark (+) on south end of stone doorsill of schoolhouse at road to north	399.83
Trexlerstown, 0.9 mile south of; on bolt in guard at southwest corner of iron bridge over Little Lehigh Creek	376.94
Little Lehigh Creek, water in	369.4
Trexlerstown, chisel mark (□) on top of boulder at northwest corner of shed at Trexlerstown Church	406.76
Trexlerstown, 1 mile north of; chisel mark (□) on limestone rock east of road, 75 feet north of summit	416.47
Fogelsville, 0.2 mile south of; chisel mark (□) on boulder east side of road	463.99
Fogelsville; chisel mark (+) on stone step in front of residence of Rev. E. J. Fogel	478.44
Fogelsville, German Reformed Church at; aluminum tablet set in southwest corner of foundation wall under corner stone, marked "514 HARRISBURG 1900"	514.356
Clausville, 1 mile southeast of; nail in root of oak tree west of road, marked "566"	565.56
Clausville, 0.9 mile southeast of; chisel mark (□) on rock north of road, marked "595" on fence	595.48
Clausville; chisel mark (□) on south end stone doorstep of schoolhouse	684.04
Clausville, 0.8 mile northwest of, and 300 feet north of Werley's carriage shop, chisel mark (□) on rock north of road, marked "623" on fence	623.46

	Feet.
Lyon Valley; chisel mark (□) on rock west of road, 75 feet north of stone arch bridge over Lyon Creek, marked "459".....	459.45
Lyon Valley, 150 feet west of road corner by hotel; chisel mark on rock north of road, marked "476".....	475.62
Lyon Valley, 0.8 mile northwest of; chisel mark (□) on rock east of road, marked "478" on fence.....	478.28
Lyon Valley, 1.7 miles northwest of, Lowhill Church; chisel mark (+) on southwest end of lower stone step of.....	651.34
Lowhill, 0.4 mile south of; chisel mark (□) on rock north of road, marked "594" on fence.....	593.76
Lowhill; on stone arch bridge over Jordan Creek, marked "512" on side.....	512.5
Lowhill; chisel mark (□) on stone at corner of road by hotel, marked "512".....	512.52
Lowhill, 0.8 mile north of; chisel mark (□) on rock north of road, marked "555".....	554.87
Pleasant Corner (Jordan post-office), 0.6 mile south of road to; chisel mark (□) on boulder at west end of north side of stone arch bridge over Jordan Creek, marked "556".....	555.75
Pleasant Corner (Jordan post-office), 0.1 mile west of road to; chisel mark (□) on boulder on north side of road, marked "571".....	571.23
New Tripoli, 1.3 miles east of; chisel mark (□) on boulder in northwest corner of crossroads west of summit, marked "701".....	701.35
New Tripoli, 0.4 mile east of; chisel mark (□) on large boulder south of road, marked "614".....	613.74
New Tripoli, 0.5 mile northeast of; bronze tablet set in southeast corner of stone basement of barn owned by A. Bennikoff, marked "573 HARRISBURG 1900".....	572.809
Germansville, 2 miles west of, and 0.2 mile east of Lochland station; chisel mark (□) on boulder north of track, 90 feet east of crossing, marked "681".....	680.94
Germansville, depot; top of rail at crossing by, marked "608" on plank.....	607.7
Germansville, 600 feet north of crossing by station, chisel mark (□) on north end of bridge seat, east abutment of railroad trestle bridge over Jordan Creek, marked "601".....	601.06
Germansville, 0.9 miles northeast of; chisel mark (□) on north end of east wall of open railroad culvert, marked "639".....	638.96
Best, 1.2 miles west of; chisel mark (□) on boulder south of track, 2,000 feet west of crossing, marked "613".....	613.29
Best, 0.5 mile west of; chisel mark (□) on boulder south of track, 500 feet west of road crossing, marked "577".....	576.72
Best, 500 feet northeast of railroad station; bronze tablet set in north end of bridge seat west abutment of small railroad bridge, marked "548 HARRISBURG 1900".....	548.305
Best station; top of rail at crossing, marked "545" on plank.....	544.9
Best, 1.1 miles northeast of; chisel mark (□) on north end of parapet wall east abutment small railroad trestle bridge, 500 feet west of water tank, marked "480".....	480.
Emerald station; top of rail at crossing, marked "433" on plank.....	432.8
Emerald, 0.6 mile east of; chisel mark (□) south end of bridge seat, west abutment of railroad trestle bridge, marked "B. M.".....	409.81
Slatington; chisel mark (□) on west end parapet wall of, south abutment of Lehigh Valley Railroad bridge, 300 feet south of station, marked "366".....	366.13

SLATINGTON, VIA ROCKDALE AND SCHNECKSVILLE, TO LYON VALLEY.

	Feet.
Slatington, 0.7 miles south of: Lehigh Valley Railroad bench mark No. 92, iron bolt in west pier of Lehigh and New England Railroad overhead crossing bridge over Lehigh Valley Railroad, marked "U.S.G.S.B.M. 358"	357.82
Slatington, 1.6 miles south of; chisel mark (□) on rock east of track, marked "354"	353.98
Rockdale, 1.6 miles northwest of; chisel mark (□) on north end of coping of arch culvert, marked "353"	353.14
Peter's Crossing station: top of rail at, marked "355"	354.7
Rockdale: Lehigh Valley Railroad bench mark, iron bolt in foundation stone of water tank, 250 feet north of station, marked "354"	353.76
Rockdale, 250 feet north of station: bronze tablet set in foundation stone under pillar at southeast corner of water tank of Lehigh Valley Railroad, marked "354 HARRISBURG 1900"	353.772
Rockdale, station: top of rail, marked "351" on platform	251.5
Rockdale, 1.5 miles southwest of: chisel mark (□) on large rock east of road, 100 feet south of road corner, marked "501"	501.41
Unionville (Neff's post-office), 1 mile northeast of; chisel mark (□) on boulder west of road, 100 feet west of stream, marked "614"	613.99
Unionville (Neff's post-office), 0.3 mile northeast of: chisel mark (□) on boulder west of road, 500 feet north of tannery, marked "612"	612.34
Unionville (Neff's post-office), Union Church: chisel mark (+) on east end of lower stone step of front entrance of	687.13
Schnecksville, Gross Hotel; chisel mark (□) on curbstone in front of, marked "669"	669.10
Schnecksville, 1.4 miles southwest of; chisel mark (□) on north end of parapet wall, west abutment of bridge over Jordan Creek, marked "403"	403.11
Weidasville, 1.3 miles northeast of; chisel mark (□) on rock east of road, marked "435"	435.14
Lyon Valley, 1 mile east of; chisel mark (□) on rock west of road, marked "504"	504.20

WOMELSDORF, VIA HOST POST-OFFICE AND SCHAEFERSTOWN (TULPEHOCKEN POST-OFFICE), BERNVILLE, GARFIELD, AND BROWNSVILLE, TO WERNERSVILLE.

Womelsdorf, 1.5 miles west of: at Philadelphia and Reading Railroad overhead bridge, at north wall, east side, cut in base, being a United States Coast and Geodetic Survey bench mark	483.463
Womelsdorf, at northwest corner Main and Second streets: in east side of foundation, south end of Filbert & Bros., store, aluminum tablet, marked "HARRISBURG 433"	433.557
Signpost "To Bernville 6 miles. To Stouchsburg 2 miles" at; road east and west, southwest corner of, rock, marked on fence post "476"	475.62
Host post-office, $\frac{1}{2}$ mile south of; on east side road on culvert rock	397.20
Host post-office: west side of Jacob Shaffner & Co.'s store in top of wall, bronze tablet, marked "HARRISBURG 369"	368.781
Host Church: at northwest corner roads, on stone foundation graveyard fence	418.35
Host Church, 1 mile north of; 10 feet east of southeast corner of road east and west, nail in stump	485.43
Host Church, about 1.5 miles north of: on top of ridge and road east near sign board "Shafferstown 4 miles," stone	657.09

	Feet.
Shafferstown (Tulpehocken post-office), about 1.75 miles west of; at southwest angle of road east and west, stone, marked on post	536.08
Shafferstown (Tulpehocken post-office), 0.5 mile west of; at southeast corner of road north and south, nail in root of oak tree	498.73
Shafferstown (Tulpehocken post-office), St. Paul's Church, in the west side of stone doorsill, bronze tablet, marked "HARRISBURG 491" ..	491.403
Shafferstown (Tulpehocken post-office), 1.75 miles east of; at road northeast and signpost "Strausstown 5 miles, Rehrersburg 6 miles, and Bernville 2.5 miles." rock, marked on signpost "336"	336.31
Bernville, about 0.75 mile northwest of; stone bridge over Northkill Creek, at west end, south side of, stone marked "B. M."	307.49
Bernville, about 0.5 mile northwest of; about 300 feet east of road northwest, bolt on northeast corner of bridge	304.68
Bernville, at corner streets opposite Eagle Hotel: stone in gutter, chisel marked (□)	317.40
Bernville, 0.5 mile south of; on road to Garfield post-office and 700 feet northeast of road east, on north side of road rock, marked "316" on post on opposite side of road	316.21
Bernville, 1.4 miles east of; rock in forks of road south	348.39
Garfield post-office, 1.5 miles west of; at road south near schoolhouse, nail in floor of small bridge at sign "Bernville, 3 miles," marked "421"	421.57
Garfield post-office; in northeast corner, stone house belonging to post-master, bronze tablet marked "HARRISBURG 367"	367.292
Garfield post-office, 0.4 mile south of; opposite road west, point on small cherry stump	426.41
Pleasant Valley Hotel, 1.1 miles north of; at northwest corner of road north, at sign "Garfield 2 miles, Womelsdorf 8 miles, Hamburg 13 miles," rock	393.29
Pleasant Valley Hotel, about 0.75 mile north of; on direct road to Garfield at road east and west, at sign "To Mount Pleasant (Obold post-office) 1 mile, to Leesport 5 miles, to Centerport 6 miles, to Reading 11 miles." chisel mark on stone	292.04
Brownsville, 3.1 miles north of; on small culvert on east side of Tulpehocken Creek, near bridge over same, and 0.25 mile south of Pleasant Valley Hotel	265.52
Brownsville, 2.4 miles north of; nail in top of fence post on east side of road along Tulpehocken Creek	280.81
Brownsville, 2 miles north of; stone at northeast corner of road opposite schoolhouse	467.84
Brownsville, 0.6 mile north of; at northeast corner of road east at sign "To Reading 9 miles," chisel mark on rock	338.16
Brownsville (Lower Heidelberg post-office); in the east side of south front of schoolhouse, bronze tablet, marked "HARRISBURG 380" ..	379.588
Wernersville, 1.25 miles north of; at southeast corner of road east, sign board "To Hains Church 0.25 mile, State Hill 3.5 miles, Sinking Springs 3 miles," rock chisel marked (□)	510.89

WERNERSVILLE, VIA ROBSONIA FURNACE, TO BERKS-LANCASTER COUNTY
LINE.

Wernersville station, 800 feet west of; ledge of rock on north side of Philadelphia and Reading Railroad under highway bridge at base of north abutment, bronze tablet in, marked "HARRISBURG 388" ...	387.612
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	Feet.
Warnersville, 0.5 mile west of; Philadelphia and Reading Railroad highway bridge over, at south abutment, east side, on base	384.99
South Mountain station; top of rail opposite	394.76
Robsonia station, 0.1 mile east of; Philadelphia and Reading Railroad bridge over creek, north side and middle pier on United States Coast Survey bench mark No. XXIV	432.802
Robsonia Furnace, opposite road west; on railroad spike	482.70
Robsonia Furnace, sign "To Flickengers 5 miles, Womelsdorf 3 miles," west corner forks of road; stone	836.44
Berks-Lancaster County line; stone on east side of road and 300 feet south of house, on top of	1,043.80
Berks-Lancaster County line, about 0.9 mile south of and 0.1 mile south of house at road forks; bronze tablet set in large boulder, marked "HARRISBURG 983"	982.760

PENNSYLVANIA-MARYLAND.

BLAIR AND BEDFORD COUNTIES, PA.; ALLEGANY COUNTY, MD.

EVERETT AND HOLLIDAYSBURG QUADRANGLES, PENNSYLVANIA; FROSTBURG QUADRANGLE, MARYLAND.

The elevations published in the following list are based on a copper bolt in the doorsill of the Pennsylvania Railroad passenger station at Altoona, Pa. The elevation of this, as corrected by the United States Coast and Geodetic Survey in their latest adjustment, is accepted as 1,181.373 feet above mean sea level. This is 0.173 foot greater than the elevation of this bench mark as given in the Pennsylvania Railroad list of elevations, published May 1, 1900. The immediate elevations on which the leveling reported upon herewith is based are of various bench marks of the latter publication between Altoona and State line, which are given the same correction.

A connection is made between Stateline and a precise bench mark of the United States Coast and Geodetic Survey at Cumberland, Md., by primary levels of this list between Mount Savage, Md., and State-line, and elevations listed in the Nineteenth Annual Report of the Director of this Survey, page 363, between Mount Savage and Cumberland. The circuits therein listed and based on the Cumberland bench mark are to be lowered 0.006 foot. This includes the correction made by the United States Coast and Geodetic Survey to the elevation of that bench mark of 0.005 and a correction of 0.001 made in the Twentieth Annual Report to the elevation of a bronze tablet at that place.

The leveling was executed in 1900 under the direction of Mr. A. M. Walker, topographer, by Mr. B. C. Shepherd, levelman.

All bench marks set in the course of this work are referred to the tablet set by this Bureau at Harrisburg, Pa., and are stamped with the letters "HARRISBURG" in addition to their figures of elevation.

MOUNT DALLAS, VIA HUNTINGDON AND BROAD TOP RAILROAD, TO SAXTON.

	Feet.
Mount Dallas, Pennsylvania Railroad bridge over Juniata River; south-west abutment, square in stone, marked "1046"	1,046.41
Mount Dallas, 1 mile northeast of; milepost, nail in east side of, marked "1116"	1,116.56
Everett, L. C. Mann's clothing store; fire plug in front of, top bolt of ..	1,013.11
Everett, Union Hotel; in front wall northeast corner of, aluminum tablet, marked "HARRISBURG 1015"	1,015.707
Mount Dallas, 1.97 miles north of; stone culvert, southwest corner of coping stone of, chiseled square, marked "1180"	1,181.11
Mount Dallas, 2 miles from; second milepost, nail driven in south side of, marked "1182"	1,182.7
Mount Dallas, 3 miles north of; third milepost; nail in post, marked "1192"	1,192.77
Mount Dallas, 4 miles north of; fourth milepost; nail in post, marked "1103"	1,103.56
Mount Dallas, 3.1 miles north of; Huntingdon and Broadtop Railroad bridge over highway and stream, coping stone in southwest end, chiseled square, marked "1102"	1,102.24
Mount Dallas, 4.2 miles north of; Huntingdon and Broadtop Railroad bridge over highway and stream; southeast corner top stone of north abutment, bronze tablet, marked "HARRISBURG 1097"	1,097.69
Mount Dallas, 5 miles north of; milepost, nail in, marked "1041"	1,041.68
Mount Dallas, 6 miles north of; milepost, nail in, marked "1102"	1,102.95
Mount Dallas, 7 miles north of; milepost, nail in, marked "1029"	1,029.31
Mount Dallas, 8 miles north of; milepost, nail in, marked "958"	958
Cypher Station, 131 feet northeast of platform and 21 feet north of center of main track; niche cut in rock, marked "944"	944.45
Cypher Station, 1,310 feet east of, iron railroad bridge over Juniata River; west wing wall, coping stone, chiseled square, marked "927" ..	928.13
Mount Dallas, 9 miles north of; milepost, nail in, marked "909"	909.90
Mount Dallas, 10 miles north of; milepost, nail in, marked "911"	911.38
Mount Dallas, 10.99 miles north of, 300 feet west of eleventh milepost; stone culvert near water station, east wing wall of, chiseled square, marked "897"	897.34
Mount Dallas, 11 miles north of; milepost, nail in, marked "901"	901.65
Hopewell, 0.6 mile west of; twelfth milepost, nail in, marked "897" ..	897.58
Hopewell, 0.25 mile west of station; stone culvert over highway and stream, northeast wing wall, coping stone, chiseled square, marked "896"	896.59
Hopewell, 75 feet north of station; I. O. O. F. block, in southwest corner of south wall, bronze tablet, marked "HARRISBURG 902"	901.994
Hopewell, 0.5 mile north of station; thirteenth milepost, nail in, marked "880"	880.31
Hopewell, 0.1 mile north of station, 150 feet southeast of thirteenth milepost; on east side of railroad track, rock, chiseled square, marked "884"	884.03
Hopewell, 1.5 miles north of, fourteenth milepost, 65 feet north of; 10 feet east of center of track, rock, chiseled square, marked "872"	872.47
Riddlesburg, 500 feet north of station; stone culvert over creek, on southeast corner coping stone, chiseled square, marked "861"	860.99
Riddlesburg, 0.25 mile north of station; fifteenth milepost, nail in	859.16
Riddlesburg, 1.25 miles north of; sixteenth milepost, nail in, marked "858"	858.16

	Feet.
Riddlesburg, 2.25 miles north of; seventeenth milepost, 90 feet west of; 10 feet north of center of track, chiseled square, marked "876"	875.81
Riddlesburg, 2.88 miles north of; opposite Standard Oil Company's pumping station, opposite coal dump, 8 feet below track, surface of pipe	872.29
Riddlesburg, 3.25 miles north of; eighteenth milepost, 60 feet north of; 8 feet east of center of track, chiseled ledge, marked "891"	891.07
Saxton, 0.5 mile south of; nineteenth milepost, nail in top of, marked "909"	908.69

SAXTON, VIA HUNTINGDON AND BROAD TOP RAILROAD, TO COVE STATION.

Saxton, corner of Church and Litetis streets: schoolhouse, in center of north wall of, aluminum tablet, marked "HARRISBURG 918"	917.830
Saxton, 0.75 mile north of; trestle over Juniata River: southwest corner of south abutment, coping stone, chiseled square, marked "833"	832.78
Saxton, 1.5 miles north of; culvert over highway; northeast corner of east abutment, coping stone, chiseled square, marked "877"	877.38
Cove Station, stone culvert over highway; southeast corner east abutment coping stone, chiseled square, marked "915"	914.80
Cove Station, stone culvert over creek and highway; east wall, 3 feet above surface of highway, bronze tablet, marked "906 HARRISBURG"	906.284

HENRIETTA, VIA WOODBURY, TO STEELTOWN.

Henrietta, passenger station of Pennsylvania Railroad: foundation at north end, shelf in rock, Pennsylvania Railroad, bench mark, marked "B.M"	1,394.54
(Pennsylvania Railroad elevation, 1,394.37.)	
Henrietta, 1.55 miles southwest of, 300 feet northwest of road to Saxton; copper rivet in base of oak tree, marked "1480"	1,480.27
Henrietta, 2.4 miles southwest of, 1,000 feet southeast of road to Hoover's farm: copper rivet in base of wild cherry tree, marked "1489"	1,489.41
Curry Station, 0.5 mile south of, 500 feet southeast of store and mill; copper rivet in base of oak tree, marked "1425"	1,425.28
Woodbury, 3.4 miles north of, 10 feet east of pike; copper rivet in base of wild cherry tree, marked "1311"	1,311.20
Woodbury, 1.1 miles north of, intersection of Martinsburg road and Hollidaysburg pike; stone culvert, chiseled square, marked "1266"	1,266.39
Woodbury, brick schoolhouse at northwest corner of foundation, bronze tablet, marked "HARRISBURG 1292"	1,291.694
Woodbury, 0.5 mile south of; 10 feet west of road, copper rivet in base of walnut tree, marked "1249"	1,249.20
Woodbury, 1.8 miles south of; near spring by roadside, ledge in rock, marked "1193"	1,293.19
Waterside, Waterside Woolen Factory: foundation, 1 foot north of front entrance, stone, chiseled cross, marked "1162"	1,163.19
Loysburg, M. E. Church: northeast corner front foundation of, bronze tablet, marked "HARRISBURG 1127"	1,127.044
Loysburg, 1.1 miles southeast of, old planing mill on Yellow Creek; northeast corner of, foundation stone, chiseled square, marked "1101"	1,101.34
Loysburg, 3.2 miles southeast of, 10 feet west of highway; copper rivet in base of white hickory tree, marked "1014"	1,014.07

	Feet.
Steeltown, 1.25 miles north of, road intersection near schoolhouse; copper rivet in base of oak tree, marked "1024"	1,024.30
Steeltown, 0.1 mile northeast of; Steele's Flour Mill, bottom step of front entrance, square in stone, marked "938"	938.20

HENRIETTA, VIA MARTINSBURG AND HOLLIDAYSBURG. TO ALTOONA, BEING
SPUR LINES FROM PENNSYLVANIA RAILROAD BENCH MARKS.

Henrietta, passenger station of Morrison's Cove branch of Pennsylvania Railroad: northwest corner of foundation, bronze tablet, marked "1393 HARRISBURG"	1,393.209
Franklin Forge, Williamsburg Branch of Pennsylvania Railroad, bridge No. 24; south abutment, southeast corner of bridge seat, top stone, bronze tablet, marked "862 HARRISBURG"	862.475
Martinsburg, Morrison's Cove Bank: north wall, northeast corner of foundation stone, bronze tablet, marked "1407 HARRISBURG"	1,407.500
Roaring Spring, Church of God; corner stone in northwest corner of building, bronze tablet, marked "HARRISBURG 1237"	1,236.853
Hollidaysburg, Blair County court-house; near soldiers' monument, northeast corner of front wall of foundation, aluminum tablet, marked "1010 HARRISBURG"	1,010.524
Canan Station, Pennsylvania Railroad, red brick schoolhouse; in front wall, 3 feet west of door, bronze tablet marked "HARRISBURG 1075"	1,075.251

MOUNT SAVAGE, MD., TO HYNDMAN, PA.

Mount Savage, 1.35 miles northeast of, 0.1 mile southwest of Combs Mill; iron bridge over creek, southeast wing wall, chiseled square, marked "1045"	1,044.90
Barreelsville, 0.36 mile east of; "Bell's Rock" ledge, chiseled mark on, marked "9402"	939.51
Mount Savage, 3.65 miles northeast of; 1,000 feet east of water trough, oak tree, ledge in base, marked "862"	861.76
Corrigansville, 1.2 miles west of, Cumberland and Pennsylvania Railroad bridge over creek; northwest abutment, coping stone, chiseled square, marked "808"	808.25
Corrigansville, iron highway bridge over Sulphur Creek; northwest abutment, coping stone, chiseled square, marked "715"	715.41
Ellerslie, 1.07 miles southwest of; 15 feet south of road, nail in root of maple tree, marked "712"	711.80
Ellerslie, Dr. Haven's hotel; southwest corner of, rock, chiseled square, marked "728"	728.15
Ellerslie, 2.94 miles northeast of: wooden county bridge over Gladdens Run on creek road, northwest wing wall, coping stone, chiseled square, marked "794"	793.84
Cooks Mills, Baltimore and Ohio station; northeast corner of platform, marked "775"	775.08
Hyndman, 3.5 miles south of; on west side of creek road, nail in root of beech tree, marked "782"	781.71
Hyndman, 2.7 miles southeast of; 710 feet east of road to Cook's farm, nail in root of maple tree, marked "807"	806.50
Hyndman, 2.41 miles southeast of, wooden county bridge over Willis Creek; southwest abutment, coping stone, chiseled square, marked "842"	842.08

MARYLAND.

ERRATA IN PREVIOUS REPORTS.

Elevations in the vicinity of Baltimore published in preceding reports are corrected by various amounts by a readjustment with work of the past two seasons. (Full description, with corrected list of elevations, will be found in this report.)

The following corrections to the Twenty-first Annual Report are made necessary by the latest adjustment of the United States Coast and Geodetic Survey:

	Foot.
Page 445: Elevation at Cumberland.....	—0.006
Page 446: List of elevations in vicinity of, depending on Great Cacapon, though referred to Cumberland.....	—0.070

HARFORD AND BALTIMORE COUNTIES.

BELAIR, HAVRE DE GRACE, AND PARKTON QUADRANGLES.

The elevations published in the following list are the result of the field work of the seasons of 1899–1900, and are based on an aluminum tablet in the city hall, Baltimore, Md., the height of which is accepted as 20.630 feet above mean sea level, as derived from the United States Coast and Geodetic Survey tide gauge in the city of Baltimore.

The leveling was done under the direction of Mr. W. Carvel Hall, topographer, by Messrs. C. H. Smith, John W. Hodges, and Hargraves Wood, levelmen.

All bench marks dependent on this datum are marked with the letters “BALTO.,” referring them to the Baltimore bench mark.

SCARBORO, VIA FOUNTAIN GREEN, TO CARSINS.

	Feet.
Allibone, 1 mile north of; on nail in root of oak tree, at south end of iron bridge over Deer Creek, marked “174” on tree	176.66
Allibone, 0.5 mile north of; aluminum tablet set in southeast corner Mrs. Webster’s spring house, 3 feet above ground, marked “BALTO. 209”	211.099
Gibson, 0.25 mile north of; on nail in root of poplar tree on brow of hill at east side of road, marked “466” on tree	467.81
Hickory; on nail in root of locust tree, about 30 feet west of post-office on same side of road, marked “477” on tree	479.22
Fountain Green, 1 mile north of; on top of rock at northwest corner intersection with road southwest and northeast, marked “290” on rock	292.59
Belair; aluminum tablet set in steps of Belair court-house, marked “BALTO. 394”	395.650
Fountain Green; on nail in root of sycamore tree at northwest corner of crossroads, opposite post-office, marked “340” on tree	341.99
Fountain Green, 0.5 mile east of; on nail in root of oak tree standing with a clump of three large oaks at north side of road opposite the Woman’s Christian Temperance Union Hall, marked “416” on tree..	417.86

	Feet.
Fountain Green, 1.5 miles east of; known as Shucks Corner, on nail in root of chestnut tree at northeast corner intersection with crossroads, marked "397" on tree	398.73
Churchville, 0.5 mile east of; on top of large rock pyramidal in form at the southeast corner of intersection with road east to Aldino, marked "391" on rock	392.46
Carsins, 1 mile west of; on nail in root of sycamore tree south side of road and 300 feet west of junction with road running south, marked "372" on tree	372.90
BENTLEY SPRINGS, VIA FEDERAL HILL, PYLESVILLE, AND SCARBORO, TO DARLINGTON.	
Bentley Springs, 1,300 feet south of; B. M. No. 33, Northern Central Division Pennsylvania Railroad, on copper bolt in northwest wing wall of bridge No. 33	502.110
Bentley Springs, 0.5 mile north of; bronze tablet in northwest corner of Bentley Methodist Church, marked "BALTO. 607"	608.019
Bentley Springs, 1.8 miles northeast of; on nail in root of forked chestnut at southwest corner of junction with York turnpike, marked "751" ..	751.39
Trump; bronze tablet in foundation of M. S. Van Trump's store and post-office on north side, edge of cellar window, marked "BALTO. 716"	716.333
Trump, 1 mile east of; on northwest corner stone of Shane schoolhouse lot, marked "709"	709.26
Shane, 1.4 miles south of; on nail in root of chestnut tree at southwest corner of crossroads, marked "675"	676.00
Shane, 2.3 miles southeast of; on nail in root of oak 75 feet from forks of road, marked "617"	617.48
Drybranch; on nail in root of oak tree in front of church, marked "591" ..	591.32
Drybranch, 0.5 mile southeast of; on nail in root of locust tree in center of crossroads, marked "644"	645.15
Bradenbaugh; bronze tablet in stone foundation of post-office just to right of cellar entrance, marked "BALTO. 604"	605.149
Bradenbaugh, 1.5 miles east of; on nail in root of oak tree 200 feet south of intersection of road to Federal Hill, marked "591"	591.84
Bradenbaugh, 2.6 miles east of; on bolt in northwest corner of bridge over Little Creek, marked "400"	400.29
Federal Hill; aluminum tablet set in southeast corner foundation stone of J. F. Devoe's house opposite post-office, marked "BALTO. 590" ..	591.477
Federal Hill, 1.2 miles north of; on nail in root of cherry tree north side of road at junction with road running southeast to rocks, marked "497" on tree	499.36
Clermont Mills, 0.1 mile north of; on nail in root of oak tree, west side of road, marked "461" on tree	463.50
Clermont Mills, 1.8 miles north of; on top of large rock on north side of road and 25 feet east of junction with road running north and south, marked "499" on rock	501.02
Pylesville, 1 mile west of; on nail in root of locust tree southeast corner intersection with road running north and south, and opposite large stone house, marked "453" on tree	454.82
Pylesville; aluminum tablet in northeast corner of Pyles's Mill, about 4 feet above ground in foundation stone, marked "BALTO. 356"	357.778

	Feet.
Pylesville, 1.5 miles east of; on top of large rock in field 100 feet south of road and about 300 feet east of junction with road running south, marked "459" on rock	461.23
Prospect, 2.2 miles northwest of; on nail in root of silver maple tree on south side of road at junction of road from Pylesville with road to Delta and Prospect, marked "511" on tree	512.81
Prospect; on nail in root of pine tree at southeast corner of post-office, marked "405" on tree	406.77
Macton, 0.1 mile south of; aluminum tablet in foundation stone at northwest corner of J. M. McNabb's house, 4 feet above ground, marked "BALTO. 249"	251.157
Macton, 1 mile south of; on nail in root of cherry tree north side of road, opposite junction with road running south to Scarborough, marked "307" on tree	309.44
Scarboro; on nail in root of paradise tree at southwest corner of post-office, marked "444" on tree	445.92
Dublin; on top of rock at southeast corner of crossroads, diagonally opposite McDoon's store, marked "453" on rock	455.06
Dublin, 2 miles east of; on nail in root of locust tree east side of road, in front of Derand's dwelling house, marked "406" on tree	408.22

SPARKS, VIA MANOR, HIGH POINT, AND COOPSTOWN, TO HICKORY.

Sparks, 0.1 mile east of; bronze tablet in southwest corner of Union Chapel, 1 foot above ground, marked "BALTO. 268"	268.434
Sparks, 1.2 miles east of; on nail in root of tree 75 feet from crossroads, marked "420"	420.39
Sparks, 2 miles east of; on nail in root of locust tree at southwest corner of road corners, marked "460" on fence	460.18
Sparks, 3 miles east of; on nail in root of tree 50 feet from crossroads, marked "502" on fence	502.38
Sparks, 4 miles east of; on nail in root of locust tree at crossroads, marked "545" on fence	545.79
Manor, 0.1 mile west of; on iron spike in northwest corner of weigh scales, marked "568"	568.49
Manor, 1.7 miles east of; on nail in root of large tree opposite house painted green, marked on gate "489"	489.52
Taylor; bronze tablet in southwest corner of Mr. S. Phelps's blacksmith shop, about 2 feet above ground, marked "BALTO. 583"	583.854
Taylor, 1.3 miles east of; on nail in root of oak tree at road to north, marked "596"	596.97
Upper Crossroads; on nail in root of locust tree 100 feet north of crossroads, marked "583"	583.63
Scarff; on nail in root of walnut tree at northwest corner of crossroads, marked "530"	530.35
Pleasantville; on nail in stump by telegraph pole in front of T. A. Harkins's house, marked "530"	530.89
Highpoint; aluminum tablet set in foundation stone on north side of Highpoint schoolhouse, marked "BALTO. 536"	536.864
Coopstown, 1.5 miles north of; on nail in root of chestnut tree rear Fairview school, marked "581" on tree	581.73
Coopstown, 2.4 miles east of; on nail in root of chestnut tree one-half mile east of Chestnut Hill, on south side of road in W. B. Smithson's tanyard, marked "492"	494.64

	Feet.
Hickory, 1 mile west of; on nail in root of cedar tree on south side of road in Jones's field, marked "448" on tree.....	450.33
MOUNT CARMEL, VIA HEREFORD, TO MONKTON, ALSO PARKTON, WHITE-HALL, AND GLENCOE.	
Mount Carmel; bronze tablet in foundation stone of porch in northeast corner of Miller's store and post-office, marked "BALTO. 674".....	674.052
Mount Carmel, 1.1 miles east of; on nail in root of chestnut tree in woods on top of small knoll, marked "672".....	671.50
Mount Carmel, 2.1 miles east of; on nail in root of small hickory tree north side of road, near house to left, marked "661" on tree.....	660.78
Evna, 1.5 miles east of; on nail in root of chestnut tree south side road, in woods to right, marked "657" on tree.....	657.31
Evna, 2.5 miles east of; on nail in root of gum tree inside of fence on south side road, marked "614" on tree.....	613.73
Hereford; on top of stone at corner of road running east from York pike, marked "671".....	671.19
Hereford, 1 mile east of; on nail in root of large chestnut tree south side road, opposite camp grounds, marked "638".....	637.59
Hereford, 2 miles east of; on nail in root of chestnut tree in woods at top of hill west of Monkton station, marked "598" on tree.....	598.30
Monkton, 0.5 mile north of; copper bolt in center of east end of Northern Central Railroad box culvert. Pennsylvania Railroad bench mark No. 26.....	317.77
Parkton; copper bolt in rock 175 feet east of Northern Central Railroad track and 300 feet south of station. Pennsylvania Railroad bench mark No. 31.....	420.77
Glencoe, 0.25 mile north of; copper bolt in center of east end of arch under Northern Central Railroad track. Pennsylvania Railroad bench mark No. 23.....	256.85
Whitehall; bronze tablet in northwest corner of post-office, 2 feet above ground, marked "BALTO. 348".....	348.229

MARYLAND-DELAWARE-VIRGINIA.

As result of the field work of the season of 1900, connections have been made between the entire group of levels from Baltimore south-eastward to the lower end of the Eastern Shore with six widely distributed tide gauges of the Coast Survey. The result is a mass of data which has permitted the making of final adjustments of the leveling of past and preceding years throughout this area.

Corrections to all bench marks published in previous annuals for leveling in this region should be made as follows:

To bench marks depending on datum tablet at Middletown, Del., published in the Appendix to Eighteenth Annual (p. 279), and which lie to the north and west of the Philadelphia, Wilmington and Baltimore Railroad, a constant correction of +0.640 feet must be made. To all of the above-named bench marks lying to the south and east of

the same railroad new values are to be given in accordance with the result tabulated below:

Name.	Old elevation.	New elevation.
	<i>Feet.</i>	<i>Feet.</i>
Elkton	29.50	30.14
Chesapeake City	17.354	17.857
Locustgrove	76.738	77.075
Barclay, 1 mile north of	69.36	69.85
Roberts	77.985	78.469
Goldsboro	62.863	63.548
Clayton	44.646	45.286
Massey	65.17	65.77
Bohemia Mills	43.94	45.36
Hartley	73.576	74.176
Whitehall, crossroads	19.426	20.066
Middletown	65.044	65.684

Corrections for intermediate elevations between points above tabulated should be made by interpolation. Similar corrections to the above are to be made to all elevations published in the Appendix to the Twenty-first Annual (p. 443), and depending on central datum tablet at Baltimore.

KENT, QUEEN ANNE, TALBOT, CAROLINE, DORCHESTER, WICOMICO, WORCESTER, AND SOMERSET COUNTIES, MD.; KENT AND SUSSEX COUNTIES, DEL.; AND ACCOMAC COUNTY, VA.

BETTERTON, CHESTERTOWN, ST. MICHAELS, PRESTON, OXFORD, CRAPO, NANTICOKE, SALISBURY, BARCLAY, SEAFORD, DENTON, HARRINGTON, PRINCESS ANNE, DEAL ISLAND, CRISFIELD, SNOWHILL, PITTSVILLE, AND OCEAN CITY QUADRANGLES.

The elevations in the following list are the result of field work of the seasons of 1899 and 1900, and are based on an aluminum tablet in the city hall, Baltimore, Md., the height of which is accepted as 20.63 feet above mean sea level, as derived from United States Coast and Geodetic Survey tide gage in the city of Baltimore.

The leveling was done under the direction of Mr. W. Carvel Hall, topographer, by Messrs. C. H. Smith, T. D. Leonard, George Baily, John W. Hodges, and C. H. Semper, levelers.

All bench marks dependent on this datum are marked with the letters "BALTO.," referring them to the Baltimore bench mark.

LOCUSTGROVE, VIA FAIRLEE, EDESVILLE, CENTERVILLE, EASTON, FED-
ERALSBURG, HAWKEYE, CAMBRIDGE, AND BUCKTOWN, TO SALISBURY.

	Feet.
Locustgrove, 1.8 miles southwest of; on nail in root of large poplar tree at southwest corner of crossroads, marked "78" on tree	78.82
Stillpond, 1.2 miles northeast of; on nail in root of locust tree at north-west corner crossroads, marked "74" on tree	74.65
Stillpond; iron post at east side F. H. Harper's store, marked "BALTO. 79"	78.813
Stillpond, 1.5 miles south of; on nail in root of chestnut tree at south-west corner road crossing, marked "49"	49.64
Hanesville; iron post in front of post-office at road to west, marked "BALTO. 62"	62.167
Hanesville, 3.3 miles south of; on nail in root of cherry tree on south side of road at crossroads, marked "58"	57.82
Fairlee; aluminum tablet in large rock 60 feet east of S. D. Seaverton's boot and shoe shop, marked "BALTO. 78"	78.543
Sandy Hill; on nail in root of pear tree to south of road, about 300 yards south of junction with road running east, marked on tree "55"	55.04
St. Paul's School, 1.125 miles southeast of; on nail in root of mulberry tree to west of road, in Alfred Chester's front yard, marked on tree "26"	26.03
Edesville; iron post just south of store entrance of W. L. Sutton, marked "BALTO. 24"	24.805
Edesville, 1.5 miles southeast of; on nail in root of small oak tree at junction of road running east, marked on tree "21"	21.56
Edesville, 2.5 miles southeast of; on nail in root of cherry tree at Langford Creek, in yard of J. L. Terry, marked on tree "8"	8.24
Edesville, 4 miles southeast of; on nail in root of hickory tree on south side of road at entrance to M. Y. Vickers's place, marked on tree "19"	19.28
Edesville, 5 miles southeast of; on nail in root of pear tree in P. W. Stoop's orchard, midway between house and shore of northeast fork of Langford Bay, marked "15" on tree	15.51
Hadaway's store; iron post to northeast of entrance just under window, marked "BALTO. 18"	18.738
Quaker Neck Wharf; on nail in root of locust tree between freight house and waiting room, marked "4" on tree	4.68
Burrsville, 2.5 miles northwest of; on nail in root of chestnut tree 1 mile southeast of Chester River on Johnny Cake Neck road 200 feet south of junction with Centerville road, marked on tree "42"	42.14
Burrsville, 0.25 mile northwest of; on nail in root of sycamore tree north of road at Mr. Burris's gate, marked "56"	56.18
Burrsville, 0.5 mile southeast of; on nail in root of oak tree in front of school No. 7, district No. 3, marked "59" on tree	59.97
Centerville, 1.5 miles northwest of; on top of brown stone rock at four corners, marked on rock "63"	63.13
Centerville; iron post in southeast quarter of court-house yard across path from meridian monument of Maryland State survey, marked "BALTO. 60"	60.70
Centerville, 1 mile south of; on nail in root of oak tree at southwest corner of Dr. Jacobs's yard, near forks of road to Queenstown and Wye Mills, marked on tree "51"	52.13
Centerville, 2 miles south of; on nail in root of elm tree to east of road and north of entrance gate to Mr. Smith's house, marked on tree "59"	59.96

	Feet.
Centerville, 3 miles south of; on nail in root of cherry tree west of road, at bend, 1,000 feet south of Clayton Price's house, marked "69".....	69.27
Centerville, 4 miles south of; on nail in root of hickory tree to east of road and 200 feet south of Madame Ailsas Creek, marked on tree "47".....	47.28
Wye Mills, 2.5 miles north of; on nail in root of cedar tree to east of road, just north of bend in road to westward, marked on tree "69".....	69.33
Wye Mills, 1.5 miles north of; on nail in root of poplar tree to west of road and 200 feet north of crossing of Queen Anne's Railroad, marked on tree "60".....	60.35
Wye Mills, 0.75 mile north of; on nail in root of cherry tree to east of road, 100 feet to south of entrance gate of a small brick house which stands 600 feet back from road, with weeping willow tree in front yard, marked on tree "52".....	52.388
Wye Mills; iron post at northwest corner of Anthony's store, at the end of piazza, marked "BALTO. 21".....	22.121
Wye Mills, 1 mile south of; on nail in root of oak tree to west of road, in front of negro's hut, 200 feet south of stream crossing, marked "46".....	46.92
Skipton, 1.5 miles north of; on nail in root of cherry tree 2 feet in diameter, to east of road and 200 feet north of William Wilmer's hut, marked on tree "48".....	48.48
Skipton; on top of stone in front of hedge at junction of crossroads running east, marked on stone "61".....	61.48
Skipton, 1 mile south of; on nail in root of sycamore tree to east of road and 300 feet north of house, marked on tree "51".....	51.91
Skipton, 2 miles south of; on nail in root of cedar tree to east of road at north side of entrance to Mr. J. S. Callahan's home, marked on tree "60".....	60.84
Longwoods, 0.5 mile north of; on nail in root of oak tree to west of road in a small grove opposite cottage, marked on tree "49".....	49.82
Longwoods; iron post at southeast corner of Callahan's store, marked "BALTO. 50".....	51.249
Longwoods; on nail in root of oak tree south of entrance gate of All Saints' Cemetery, marked on root of tree "38".....	38.92
Longwoods, 2 miles south of; on nail in root of oak tree west of road, in a grove, and at junction with crossroads running west through the woods, marked on tree "53".....	53.60
Longwoods, 3 miles south of; on nail in root of small oak tree to west of road, the second tree from Longwoods in a line of eight oak trees close together along the road, marked on tree "62".....	62.56
Easton, 2 miles north of; on nail in root of oak tree east of road in front of a house, marked on tree "64".....	64.40
Easton, 0.75 mile north of; on top of a large rock at forks of road, standing to west of road in front of F. P. Sempel's home, marked on rock "50".....	50.43
Easton; aluminum tablet at south end of second step of court-house, marked "BALTO. 37".....	37.545
Easton, 1 mile east of; on nail in root of cedar tree north of road and 200 feet east of S. Montaigne's home, marked "45".....	45.67
Easton, 2.5 miles east of; on nail in root of small cedar tree in front of J. Harrington's house, marked on tree "65".....	65.53
Easton, 3.5 miles east of; on nail in root of cherry tree west of road and 600 feet southeast of four corners, marked on tree "52".....	52.25

	Feet.
Dover bridge; iron post on Talbot County side, at west end of C. H. Sinclair's house, marked "BALTO. 4"	4.689
Dover bridge, 1.5 miles east of; on nail in root of small cedar tree south of road, 300 feet east of tanyard store, marked "17" on tree	17.54
Bethlehem, 0.5 mile west of; on nail in root of cherry tree between colored school and church, marked on tree "42"	42.24
Bethlehem, 0.75 miles southeast of; on nail in hemlock stump southeast of Baltimore, Chesapeake and Atlantic Railroad Company's tracks and 100 feet southeast of highway crossing, marked on stump "52" ..	52.91
Bethlehem, 2 miles east of; on nail in root of beech tree north of Baltimore, Chesapeake and Atlantic Railroad Company's track. Tree is 400 feet west of railroad curve and 40 feet back from track, marked on tree "34"	34.97
Linchester; on nail in root of poplar tree at road corners in front of Tegar's store	19.09
Linchester; iron post at west side of J. F. Tegar's store, marked on pipe "BALTO. 18"	18.783
Linchester, 1 mile east of; on nail in root of cedar tree in front of negro hut north of road, marked on tree "37"	37.71
Hynson, 0.75 mile west of; on nail in root of cherry tree north of road at junction of Federalsburg road with one running south in a field 300 feet to west of M. Coy's house, marked on tree "47"	47.78
Federalsburg; iron post at T. O. Jefferson's store, marked "BALTO. 10"	10.621
Federalsburg, 1.5 miles south of; nail in root of oak tree opposite road to right, marked "42"	43.02
Williamsburg, 1.2 miles north of; nail in root of tree 50 feet to west of crossroads, marked "29"	30.05
Williamsburg; nail in root of tree on west side of railroad, opposite store, marked on tree "41"	42.17
Williamsburg, 1.2 miles south of; nail in root of oak tree west side of road 200 feet north of lane to left, marked on tree "28"	28.78
Harrison; nail in root of maple tree southeast corner of crossroads, marked "23"	23.49
Rhodesdale, 1.4 miles north of; nail in root of oak tree on east side of road at bridge over mill race, marked on tree "20"	21.02
Rhodesdale; iron post at northwest corner of post-office, marked "BALTO. 40"	40.619
Rhodesdale, 1 mile west of; nail in root of cherry tree on north side of road, marked "44"	44.77
Rhodesdale, 2 miles southwest of; nail in root of oak tree on right side of road, marked "45"	46.24
Hawkeye, 2.8 miles north of; nail in root of cedar tree 300 feet south of forks of road, marked on tree "31"	31.76
Hawkeye; 2 miles north of; nail in root of cedar tree 50 feet north of forks of road, marked on tree "34"	35.06
Hawkeye; nail in root of small pine tree southwest corner of crossroads, marked on tree "27"	27.79
Linkwood, 1.2 miles north of; road bends to left. On nail in mudsill west side of Pennsylvania Railroad at south end of bridge, marked "20"	20.78
Linkwood; iron post in grass plat at intersection of roads near station, marked "BALTO. 21"	22.234

	Feet.
Linkwood, 1.5 miles south of; on spike in telegraph pole at railroad crossing, marked on pole "19"	20.16
Aireys; nail in root of pine tree at railroad crossing, painted on tree "16"	16.59
Thompsons; nail in root of willow oak opposite road crossing, marked on tree "15"	15.72
Thompsons, 2.1 miles south of; nail in root of pine tree 50 feet south of railroad crossing, marked on tree "21"	21.91
Cambridge; nail in root of tree on northeast corner of crossroads at south end of Cambridge, marked on tree "17"	18.29
Cambridge, court-house; bronze tablet in southwest corner, about 1 foot above ground, marked "BALTO. 19"	20.160
Cambridge, 0.5 mile southeast of at crossroads; nail in root of cedar tree, marked "12"	14.04
Cambridge, 1.5 miles southeast of; nail in root of large sycamore tree at a stone milepost, marked "3"	4.25
Sewards; on top of corner post of front yard of Mr. Seward's house, 200 feet west of post-office, marked "9"	10.63
Sewards, 0.8 mile east of; nail in root of oak tree at northwest corner of church, intersection with road leading to Cambridge, marked "6"	7.19
Bucktown; bronze tablet in brick foundation at southwest corner of post-office, marked "BALTO. 4"	5.310
Bucktown, 2.1 miles east of; nail in root of small red-oak tree at intersection of woods running north, marked "1"	2.43
Bestpitch, 0.1 mile west of; nail in root of pine on south side of road, marked "1"	2.25
Bestpitch, 4.2 miles northeast of; nail in root of small honey locust tree on north side of road, near Mr. Marshall's house, marked "10"	11.07
Drawbridge; bronze tablet in brick foundation on south side of small store, marked "BALTO. 3"	4.13
Drawbridge, 0.2 mile east of; nail in root of large pine tree on south side of road, opposite Mr. John Willie's house, marked "3"	4.67
Drawbridge, 2.1 miles east of; nail in root of large oak tree near church at intersection of crossroads, marked "5"	6.57
Drawbridge, 8 miles southeast of; nail in root of large maple tree in Mr. W. E. Calley's yard, marked "19"	20.40
Quantico; iron post in corner of fence on north side of Quantico street at Episcopal Church, marked "BALTO. 19"	20.227

CENTERVILLE, VIA ROBERTS, STARKEYS CORNERS, AND CHESTERTOWN
TO FAIRLEE.

Centerville, 1 mile east of; on nail in root of sycamore tree opposite R. McKenney's front yard, marked "60" on tree	60.97
Centerville, 2 miles east of; on nail in root of cedar tree south of road in front of a negro's hut, marked "76" on tree	76.96
Carville station, 0.5 mile northeast of; on nail in root of oak tree on north side of Philadelphia, Wilmington and Baltimore Railroad, marked "62" on tree	63.15
Prices; top of switch clearance post, painted white with black top, just south of highway crossing	66.86
Roberts, 1.5 miles southwest of; on top of joist bolt of north rail at southwest end of Philadelphia, Wilmington and Baltimore Railroad trestle over small stream, marked with white paint "61"	62.81

	Feet.
Roberts; iron post at southeast corner of Scott's store, Queen Anne and Kent Railroad, marked "BALTO. 78"	78.469
Roberts, 3 miles southwest of; on nail in oak post in hedge to west of road in J. I. Lems's peach orchard, post approximately 200 feet to north of big cheery tree in orchard, marked "64"	64.42
Starkeys Corners, 1.5 miles southeast of; on nail in root of walnut tree north of road, line between woods and peach orchard, marked on tree "67"	66.65
Starkeys Corners, 0.75 mile southeast of; on nail in root of tree to north of road at edge of woods, negro shanty nearly opposite in the clearing, marked on tree "55"	55.67
Starkeys Corners; iron post at northeast corner of crossroads, marked "BALTO. 54"	54.794
Starkeys Corners, 1 mile north of; on nail in root of oak tree to west of road, and at forks of road, marked "66" on tree	66.68
Starkeys Corners, 2 miles north of; on nail in root of willow tree at junction of road from Churchill to Southeast Creek, marked on tree "40"	40.54
South East Creek; on nail in root of willow tree at shore of creek and west of road near house of John Wall, marked "2"	2.75
Chestertown, 4 miles southeast of; on nail in root of cherry tree in front of Perry Saundres's house, 600 feet south of four corners, marked "49"	49.41
Chestertown, 2.5 miles southeast of; on nail in root of willow tree at northeast corner Churchill and Ralphs Wharf crossroad, marked on tree "45"	45.84
Chestertown, 2 miles south of; on nail in root of oak tree at junction of road running to Catlin; tree is south of road, marked "43"	43.94
Chestertown, bridge at Queen Anne side; on nail on post in southeast corner of fence around yard of Mr. Wright's house, marked "7" on post	7.42
Chestertown, court-house; aluminum tablet, marked "BALTO. 22"	21.918
Fairlee, 4.5 miles southeast of; on nail in root of locust tree south side of road and 150 feet east of junction with road to south at bridge over creek and junction with road to Chestertown crossing of Baltimore and Delaware Bay Railroad, marked "55"	54.78

FEDERALSBURG TO SEAFORD.

Federalsburg, 1.5 miles northeast of; on top of Baltimore, Chesapeake and Atlantic Railroad property post south of track, first post to east of private road crossing, marked on post "41"	41.84
Oakgrove, 1 mile west of; on nail in Philadelphia, Wilmington and Baltimore Railroad property post south of track, 400 feet east of and across track from 8-mile post, marked "48"	48.33
Oakgrove, 0.3 mile west of; on top of stone post marking Maryland and Delaware State line, north of Philadelphia, Wilmington and Baltimore Railroad tracks, marked "47"	47.75
Oakgrove, 1 mile east of; on bell of pipe running under Philadelphia, Wilmington and Baltimore Railroad tracks, marked on pipe "38"	38.30
Oakgrove, 2.3 miles east of; on top of Philadelphia, Wilmington and Baltimore Railroad property post to south of tracks at edge of pine grove 400 feet west of 3-mile post, marked on post "35"	35.57

	Feet.
Seaford, 1 mile west of; on top of property post to north of Philadelphia, Wilmington and Baltimore Railroad tracks and 600 feet east of 1-mile post, marked "28"	29.09
Seaford Station, Philadelphia, Wilmington and Baltimore Railroad: on top of bolt in stone doorsill of ladies' waiting room Pennsylvania Railroad	11.43
GOLDSBORO, VIA WHITLEYSBURG, HARRINGTON, SEAFORD, SALISBURY, AND PRINCESS ANNE, TO CRISFIELD.	
Goldsboro, at; aluminum tablet in east end of station, marked "BALTO. 63"	63.548
Goldsboro, 1.5 miles south of; on nail in root of oak tree east of Philadelphia, Wilmington and Baltimore Railroad tracks and directly across tracks from 21-mile post, marked on tree "49"	49.32
Greensboro, 1.5 miles north of; on nail in root of oak tree west of Philadelphia, Wilmington and Baltimore Railroad track, in a scrub growth of trees, 200 feet north of clearing, marked on tree "46"	46.36
Greensboro; iron post, 10 feet north of station at edge of platform, marked "BALTO. 40"	40.917
Whiteleysburg, 1.25 miles west of; on nail in root of poplar tree north of road, tree stands in field near house, marked on tree "58"	58.14
Whiteleysburg; iron post at northeast corner of M. N. Anthony's store, marked "BALTO. 63"	63.275
High Church, 2.5 miles west of; on nail in root of persimmon tree west of road, at junction with crossroad, on south side of the corner is a shanty painted red, marked on tree "63"	63.09
High Church, 1 mile west of; on nail in root of oak tree south of road, 100 feet east of forks of road, stands at edge of field with woods at other side of road, marked on tree "63"	63.91
High Church; on nail in root of oak tree at northeast corner of a church, marked on tree "59"	59.98
Harrington, 3.25 miles west of; on nail in root of large oak tree north of road and 300 feet west of Marsh Hope Creek, marked on tree "58"	58.07
Harrington, 2.5 miles west of; on nail in root of small pine oak tree at forks of road, marked on tree "58"	58.15
Harrington, 1.25 miles west of; on nail in root of maple tree in front of a negro hut to south of road at forks of road, marked on tree "60"	60.13
Harrington; copper bolt in doorsill of waiting room Philadelphia, Wilmington and Baltimore Railroad, and Pennsylvania Railroad, bench mark	62.52
Harrington; aluminum tablet in small doorsill of station, marked "BALTO. 62"	62.234
Farmington, 1.5 miles north of; on bell of water pipe running under Philadelphia, Wilmington and Baltimore Railroad tracks 300 feet north of 30-mile post, marked on pipe "59"	59.74
Farmington, 0.5 mile north of; on nail in root of small oak tree west of Philadelphia, Wilmington and Baltimore Railroad track and 200 feet north of W. Harmon's house, marked on tree "59"	59.65
Farmington, 1 mile south of; on top of property post, 700 feet north of 28-mile post and on opposite side of track, marked "61"	62.06
Greenwood, 2.5 miles north of; on top of property post to west of track and 600 feet north of 27-mile post, marked "58"	59.03

	Feet.
Greenwood, 1.25 miles north of; on top of property post west of tracks and 500 feet south of 26-mile post	57.39
Greenwood; iron post at southeast corner of piazza of F. E. Owens's store, diagonally across track from station, marked "BALTO. 47"	48.131
Greenwood, 0.5 mile south of; on property post between siding and main track at south end of siding	49.08
Greenwood, 1.5 miles south of; on top of property post 300 feet north of 23-mile post and on same side of track, marked "47"	47.68
Bridgeville, 1.5 miles north of; on nail in oak stump about 600 feet north of charcoal mill on east side of track, marked "48"	48.30
Bridgeville, 0.5 mile north of; on last bolt at southwest end of trestle over small creek, bolt painted white, marked "44"	44.48
Bridgeville, 0.5 mile south of; on property post west of track at edge of peach orchard and 100 feet south of a colored man's hut, marked "49"	49.42
Cannon, 1 mile north of; on bolt of abutment at south end of trestle over small creek, bolt painted white, marked on trestle "44"	44.19
Cannon; on top of property post at southeast corner of station, marked "44"	44.75
Cannon, 1 mile south of; on top of property post about 600 feet south of milepost, marked "36"	36.47
Ross station, Philadelphia, Wilmington and Baltimore Railroad, 1 mile north of; on bolt in bridge over small stream. Bolt is painted white and is last bolt on southwest corner of bridge, marked "37"	37.43
Seaford, 1 mile north of; on top of property post 500 feet south of station on east side of track, marked on post "36"	36.51
Seaford; aluminum tablet in stone doorsill of Sussex National Bank, corner High and Cornwell streets, marked "BALTO. 29"	29.501
Broadcreek; aluminum tablet in foundation of northeast corner of James Hall's house, 500 feet east of railroad and 300 feet south of crossroads on main road, marked "BALTO. 41"	42.010
Laurel; top of bolt in guard rail on east side of railroad bridge over Laurel River, 90 feet from north end, marked "23"	24.30
Laurel, 2.7 miles south of; nail in top of timber back wall southwest end of bridge over stream, marked "36"	36.94
Bacons, 1.8 miles south of; railroad spike in telegraph pole at railroad crossing, 50 feet east of railroad and 10 feet south of highway, marked "47"	47.74
Delmar; aluminum tablet in northwest corner of Delmar National Bank, marked "BALTO. 56"	57.249
Delmar, 2.4 miles south of; top of spike in southwest corner of timber back wall of bridge over large stream, marked "38"	38.94
Delmar, 3.3 miles south of; railroad spike in telegraph pole at road crossing, 30 feet south of road and 25 feet east of railroad, marked "41"	41.51
Delmar, 4.8 miles south of; spike in top of timber back wall at southeast end of bridge over stream, marked "30"	31.02
Delmar, 5 miles south of; railroad spike in telegraph pole at road crossing, 20 feet east of railroad and 60 feet north of crossing, marked "31"	31.50
Salisbury; aluminum tablet in southwest corner of front face of courthouse, marked "BALTO. 22"	23.200
Salisbury, 2.5 miles south of; top of bolt in guard rail at southeast end of bridge over river, marked "23"	23.64
Fruitland; railroad spike in telegraph pole 60 feet south of highway near station and 20 feet east of railroad, marked "39"	39.83

	Feet.
Eden; aluminum tablet in northwest corner of foundation post-office, marked "BALTO. 29"	29.968
Loretto; railroad spike in telegraph pole 30 feet east of track and 40 feet north of highway, marked "20"	20.98
Princess Anne; railroad spike in telegraph pole on east side of railroad opposite water tank and 150 feet north of station, marked "16"	16.65
Princess Anne; bronze tablet in front face of Somerset Savings Bank on Main street, marked "BALTO. 17"	18.130
Peninsula Junction; railroad spike in telegraph pole between tracks 20 feet north of station, marked "15"	15.46
Westover; iron post at intersection of New York, Philadelphia and Norfolk Railroad and road leading to Cottage Grove, opposite M. E. Miles's store, marked "BALTO. 15"	14.156
Kingston; railroad spike in telegraph pole on east side of railroad 75 feet north of station, marked "6"	7.16
Marion; iron post at southeast corner of A. Davis's drug store on Main street, 60 feet east of railroad and 25 feet north of station, marked "BALTO. 7"	7.417
Marion, 2 miles south of; railroad spike in telegraph pole at crossing, 30 feet east of railroad and 5 feet north of highway, marked "8"	8.37
Hopewell; railroad spike in telegraph pole 30 feet east of railroad and 30 feet north of station, marked "5"	5.891
EDEN, VIA LONGRIDGE, WHITEBURG, AND POCOMOKE CITY, TO MASSEY.	
Eden, 3.2 miles east of; nail in top of sawed stump 50 feet east of private road on north edge of highway, marked "49"	49.49
Eden, 5.9 miles east of; nail in root of oak tree at intersection of county and private roads, marked "47"	47.88
Longridge; iron post at southeast corner of post-office, marked "BALTO. 50"	50.727
Longridge, 6.7 miles south of; nail in small gum stump on west side of road, at trail leading west, marked "38"	37.63
Whiteburg; iron post at southeast corner of old store, inside of Mr. J. S. P. White's yard, in front of house, marked "BALTO. 30"	29.674
Whiteburg, 1 mile south of; nail in root of small gum tree on west side of road, near bridge, marked "18"	18.14
Whiteburg, 3 miles south of; nail in root of persimmon tree on west side of road, opposite entrance to house, marked "32"	31.70
Whiteburg, 5.3 miles south of; top of large stone at intersection of Snow Hill and Pocomoke City roads, marked on fence "29"	26.73
Whiteburg, 8.2 miles south of; nail in root of large pine tree at intersection of roads at Finley's Chapel, marked "7"	7
Whiteburg, 9.7 miles south of; nail in sill at center of bridge over Pocomoke River, marked "7"	6.73
Pocomoke City, 1 mile southeast of; nail in top of south gatepost, entrance to Mr. Fleming's house, marked "13"	12.53
Pocomoke City, 5.1 miles southeast of; nail in root of cedar tree at I. Fisher's house, marked "13"	12.26
Wagram; nail in root of large sycamore tree at intersection of Bay Side and Massey roads, marked "14"	13.03
Wagram, 1 mile southeast of; nail in root of black-walnut tree opposite dwelling, marked "16"	15.84
Massey; iron post at New Church station, New York, Philadelphia and Norfolk Railroad, marked "BALTO. 24"	23.751

WESTOVER, VIA POCOMOKE CITY, TO GOODWILL.

	Feet.
Westover, 1.6 miles southeast of; on end of bolt in top hinge of gatepost, entrance to Mr. John Sloan's house, marked on post "21"	20.74
Westover, 4.7 miles south of; nail in root of small cherry tree on east side of road, near A. Bennett's house, marked "20"	19.61
Costen, 0.3 mile north of; nail in root of large white-oak tree at sharp turn in road, marked "21"	20.31
Costen, top of rail at railroad crossing; marked on platform "22"	21.35
Costen, 0.8 mile south of; nail in root of white-oak tree near Quniter Church, marked "21"	20.06
Costen, 1.8 miles south of; nail in root of large red-oak tree at St. Luke's M. E. Church, intersection of Princess Anne and Crisfield roads, marked "13"	12.44
Pocomoke City, 1 mile north of; nail in root of large sweet-gum tree near railroad crossing, marked "9"	8.44
Pocomoke City; aluminum tablet in doorsill of Pocomoke City Hotel, corner Front and Market streets, marked "BALTO 8"	7.523
Pocomoke City, 2.3 miles east of; nail in root of large white oak at intersection of private road, marked "10"	9.56
Pocomoke City, 3.2 miles east of; nail in root of one of three small gum trees on south side of road, marked "13"	12.21
Pocomoke City, 4.3 miles east of; nail in root of large pine tree south side of road, opposite dwelling, marked "17"	16.35
Goodwill; nail in root of sycamore tree, at intersection of crossroads, in front of post-office, marked "33"	32.04

FRANKLIN CITY, VIA GOODWILL, SNOWHILL, LONGRIDGE, WANGO, AND MELSON, TO DELMAR.

Franklin City; bronze tablet in foundation wall of front of post-office, marked "BALTO 4"	3.415
Franklin City, 1 mile north of; on southeast corner of boundary stone between Virginia and Maryland, on outskirts of Greenbackville, marked "7"	6.72
Franklin City, 1.8 miles north of; nail in root of pine tree on north side of road, near a road leading north, marked "26"	25.40
Franklin City, 5.6 miles northwest of, at "Little Mill;" nail in top of stringer on east side of mill-race bridge, on south end, marked "24"	23.40
Goodwill, 1 mile southeast of; nail in root of black-walnut tree opposite a small building of Mr. Jesse Tabman's, marked "31"	30.26
Goodwill, 1.1 miles east of: at forks of roads nail in root of small white-oak tree, on north side of road, marked "38"	37.02
Goodwill, 2 miles east of; nail in root of small peach tree at Mr. Holland's house, marked "20"	19.76
Klej Grange; iron post at intersection of roads from Maraponi Wharf and Snow Hill, on property of Drexel heirs, opposite post-office, marked "BALTO 30"	29.283
Klej Grange, 1 mile east of; nail in root of wild cherry tree, in front of M. Pruitt's house, on north side of road, marked "30"	29.69
Klej Grange, 2 miles east of; nail in root of large white-oak tree in yard of Mr. Kelley's house on south side of road, marked "20"	19.42
Klej Grange, 5.1 miles east of: nail in root of red-oak tree at corner of Union Sunday-School House, intersection of Old Virginia road with Snow Hill road, marked "25"	24.25

	Feet.
Snowhill, court-house; tablet in sill of front entrance porch on north-east side of steps, marked "BALTO. 21"	20.552
Snowhill, 1.2 miles northwest of; nail in root of persimmon tree, at intersection of Pocomoke and Colbourne roads, marked "22"	21.76
Snowhill, 6.2 miles northwest of; nail in root of white-oak tree on east side of road at intersection of road leading southeast, marked "46"	45.49
Snowhill, 7.2 miles northwest of; nail in root of white-oak tree in front of Piney Grove schoolhouse, marked "43"	42.42
Colbourne, iron post opposite post-office; in northwest corner of Mr. J. E. Dickerson's front yard, marked "BALTO. 40"	40.046
Colbourne, 1 mile northwest of; nail in root of persimmon tree in front of Mr. J. C. Siman's house, marked "43"	42.90
Colbourne, 2.6 miles northwest of; nail in root of black-oak tree, at intersection of Colbourne and Snow Hill roads, known as Johnson and Old Furnace road, marked "37"	36.72
Longridge, 1 mile east of; nail in root of oak tree 50 feet north of forks of road, marked "46"	46.86
Kelly; nail in root of large maple on south side of road, 20 feet east of post-office, marked "44"	45.02
Kelly, 4.5 miles north of; nail in stump on south side of road, 650 feet east of crossroads, marked "44"	44.77
Wango, 1,000 feet west of post-office; spike in root of large oak tree on north side of road, marked "45"	45.52
Wango, 2.4 miles north of; nail in root of oak tree on east side of road, in front of George Bishop's house, marked "50"	50.71
Parsonsburg; iron post at northeast corner of Riggins' grocery store, 100 feet north of railroad, marked "80"	79.651
Parsonsburg, 1.2 miles north of; nail in root of large maple tree in yard of house, near a well, marked "81"	84.44
Parsonsburg, 3 miles north of; nail in root of large oak tree on east side of road, 100 feet south of fence corner, marked "76"	76.02
Melson; nail in root of large maple tree at four corners, 100 feet south of church and in triangular plot of grass, marked "63"	62.62
Melson, 2.3 miles west of; nail in root of oak tree on north side of road and at forks of road to farmhouse, marked "55"	55.08
Melson, 5 miles west of; nail in root of large maple tree on south side of road, 400 feet south of drab house with white fence, marked "49"	48.87

SNOWHILL, VIA BERLIN, TO WANGO.

Snowhill, 2.9 miles northeast of; on nail in root of cedar tree in front yard of house, south of road, marked "23"	22.61
Snowhill, 3.9 miles northeast of; on nail in root of pine tree north of road, near schoolhouse, marked "24"	23.98
Snowhill, 4.8 miles northeast of; on nail in root of gum tree in front of John E. Bradford's house, marked "24"	23.21
Snowhill, 5.9 miles northeast of; on nail in root of black-walnut tree on the south of road, just inside of fence near dwelling, marked "33"	32.67
Newark; iron post at southeast corner of Quenponco station, Philadelphia, Washington and Baltimore Railroad, marked "BALTO. 35"	35.151
Newark, 3 miles northeast of; on nail in root of large poplar tree south of road, marked "27"	26.70
Ironshire, 2.2 miles northeast of; on nail in root of black-walnut tree on west of road, 200 feet west of road leading east, marked "42"	42.13

	Feet.
Berlin; bronze tablet on southwest corner of front step of Exchange Savings Bank, marked "BALTO. 45".....	44.878
Berlin, 1 mile west of; on nail in root of cedar tree on south of road, 100 feet east of road leading to dwelling, marked "36".....	35.36
Berlin, 2.9 miles west of; on nail in root of maple tree on north side of road, near small bridge, marked "26".....	26.06
Berlin, 8 miles west of; on nail in root of cherry tree on south of road, at entrance to Mr. R. Dennis's house, marked "32".....	32.24
Powellville; on nail in root of tree in front of Mr. J. Bailey's house, marked "32".....	31.78
Powellville, 1 mile west of; on nail in root of large gum tree on south of road, at old milldam, marked "36".....	35.71
Powellville, 2 miles west of; on nail in root of pine tree on north side of road, at intersection with a road running north, marked "64".....	64.12
Powellville, 3 miles west of; on nail in root of pine tree on north of road, 150 feet west of crossroad, marked "54".....	54.35
Powellville, 4 miles west of; on nail in root of large white-oak tree at crossroads, marked "54".....	54.07

BERLIN, VIA SELBYVILLE AND GUMBORO, TO MELSON.

Berlin, 1 mile northwest of; on nail in root of cedar tree on east of road, 200 feet south of Baltimore, Chesapeake and Atlantic Railroad crossing, marked "35".....	34.16
Berlin, 2 miles northwest of; on nail in root of large gum tree on west of road, at crossing of Baltimore, Chesapeake and Atlantic Railroad, marked "37".....	36.61
Berlin, 4 miles northwest of; on nail in root of cedar tree on west side, at intersection of private crossroad, marked "37".....	36.57
Campbell; iron post inside of lot on the northwest intersection of roads, west of Mr. F. S. Campbell's store, marked "BALTO. 25".....	24.775
Campbell, 1.4 miles north of; on nail in root of white-oak tree on west of road, opposite Tom Hearne's cook camp, marked "43".....	42.99
Campbell, 3.3 miles northwest of; on nail in root of hickory tree, on west of road, opposite outhouse on Mr. William Williams's place, marked "36".....	45.16
Selbyville, 2.2 miles west of; on nail in root of black-walnut tree on south of road, in front of Mr. J. F. Baker's house, marked "42".....	41.26
Selbyville, 2.8 miles west of; on nail in root of persimmon tree on north of road, at Mr. Long's house, marked "44".....	43.33
Selbyville, 4.8 miles west of; on nail in root of pine tree on north of road, near dwelling, marked "38".....	37.92
Shelbyville, 5.9 miles west of; on nail in top of pine stump on south side of road, opposite road leading north, marked "41".....	41.12
Selbyville, 7.9 miles west of; on nail in top of stump 200 feet west of entrance to Mr. William P. Donaway's house, marked "40".....	39.92
Gumboro; on nail in root of persimmon tree in front of church, in Mr. Hearne's lot, 100 feet south of crossroads, marked "44".....	43.25
Gumboro, 2.1 miles south of; on nail in root of pine tree at forks of roads, near church, marked "41".....	41.19
Twilley; iron post in yard at northwest corner of Mr. C. W. Lynch's store, marked "BALTO. 40".....	39.978
Twilley, 1 mile west of; on nail in root of pine tree at forks of roads, marked "46".....	45.97

	Feet.
Twilley, 3.9 miles west of; on nail in root of persimmon tree at intersection of Whitesville road with main road, marked "61"	61.14
Whitesville; bronze tablet in foundation wall of Mr. E. N. White & Bro.'s store, on west side in third pier of bricks back from front, marked "BALTO. 65"	65.685
Whitesville, 2 miles south of; on nail in root of pine tree at road leading south, marked "64"	64.15

WEST VIRGINIA.

ERRATA IN PREVIOUS REPORTS.

The following correction in the Appendix to the Twenty-first Annual Report, page 426, is due to the latest adjustment of the United States Coast and Geodetic Survey: Elevation at Grafton, W. Va., correction, +0.125 foot.

OHIO.

ERRATA IN PREVIOUS REPORTS.

The following correction in the Appendix to the Twenty-first Annual Report, pages 456-461, is derived from the latest adjustment of the United States Coast and Geodetic Survey: List of elevations from Chillicothe to Columbus and in vicinity of Columbus, correction, -0.518 foot.

CENTRAL SECTION OF TOPOGRAPHY.

In this section, under the direction of Mr. John H. Renshawe, geographer in charge, spirit leveling was continued for the control of the regular topographic work executed during the year in the various localities listed below. In addition, leveling was carried on in the following localities during the year 1900, but as the field work in those localities is not yet completed, or corrections are pending, the results will not be published until later:

Alabama—Talladega, Coosa, and Elmore counties.

Arkansas—Carroll, Madison, Clark, Dallas, Ouachita, and Calhoun counties.

Wisconsin—Lincoln and Marathon counties.

OHIO.

ERRATA IN PREVIOUS REPORTS.

To the elevations published in the Appendix to the Twenty-first Annual Report apply the following correction, which is derived by the latest adjustment of the Coast and Geodetic Survey, pp. 465 to 467: List of elevations based on a Coast and Geodetic Survey bench mark at Toledo, correction, +0.389 foot.

INDIANA-KENTUCKY.

DAVIESS, GIBSON, PIKE, DUBOIS, WARRICK, AND SPENCER COUNTIES,
IND.; DAVIESS AND HANCOCK COUNTIES, KY.

BOONVILLE, PETERSBURG, ROCKPORT, TELL CITY, VELPEN, HUNTINGSBURG, DE-
GONIA, AND ST. MEINRAD QUADRANGLES.

The elevations in the following list are based on Bench Mark Z of the Coast and Geodetic Survey at Washington, near Vincennes, Ind., a \square cut on the sill of a basement window at southeast corner of courthouse. The elevation of this, as corrected by the latest adjustment of that Bureau, is accepted as 508.599 feet above mean sea level.

The leveling on the Boonville and Petersburg quadrangles was done under the direction of Mr. R. C. McKinney, topographer, by Mr. L. E. Granke, levelman, in 1899.

The leveling on the Rockport and Tell City quadrangles was done under the direction of Mr. Charles E. Cooke, topographer, by Mr. Dean Halford, levelman, in 1900.

The leveling on the Velpen, Huntingsburg, Degonia, and St. Meinrad quadrangles was done under the direction of Mr. Charles W. Goodlove, topographer, by Mr. C. E. Hewitt, levelman, in 1900.

All bench marks are referred to the Coast and Geodetic Survey bench mark at Vincennes, and are stamped with the letters "VIN" in addition to the figures of elevation:

INDIANA.

	Feet.
Evansville, corner of Main and Water streets, an iron projection on iron door sill of brick building, 48.84 feet above zero of water gauge.....	377.874
T. 6 S., R. 10 W., sec. 14, southeast corner of; at intersection of roads, 4 feet west and 3 feet 7 inches north of fence corner; iron post, marked "387 VIN".....	386.897
Evansville, at Evansville and Terre Haute railroad depot, top of rail...	382.7
T. 5 S., R. 10 W., sec. 24, at southwest corner of; about 3 feet south of southwest corner of schoolhouse; iron post, marked "390 VIN".....	390.394
T. 4 S., R. 10 W., sec. 25, at center of; at northwest corner of crossroads; iron post marked "429 VIN".....	428.904
T. 4 S., R. 9 W., sec. 21, northeast $\frac{1}{4}$ of; 27 feet north and 29.5 feet east of east end of bridge over canal; iron post, marked "392 VIN".....	391.778
T. 5 S., R. 9 W., sec. 21, center of; at southwest corner of crossroads, 13 feet south of fence corner; iron post, marked "411 VIN".....	411.238
Stephenson, in T. 6 S., R. 9 W.; 2.5 feet south of southeast corner of schoolhouse, west side of road and 500 feet north of railroad; iron post, marked "389 VIN".....	389.267
T. 6 S., R. 8 W., sec. 6; 0.3 mile west of center of; 4 feet north of fence, at forks of road; iron post, marked "454 VIN".....	453.743
Boonville, 85 feet west and 95 feet north of amphitheater in fair grounds, in meridian stone; aluminum tablet, marked "395 VIN".....	395.344
T. 4 S., R. 8 W., sec. 27, at center of; 6.67 feet west and 2.25 feet south of fence corner, at northwest corner of crossroads at cemetery; iron post, marked "487 VIN".....	487.201

	Feet.
T. 3 S., R. 8 W., sec. 28, at northeast corner of; 6.5 feet west and 2.83 feet north of fence corner, at southwest corner of crossroads; iron post, marked "501 VIN"	501.462
T. 2 S., R. 8 W., sec. 21, at center of; 15.5 feet west and 28.5 feet north of fence corner, the most westerly of two formed by intersection of roads; iron post, marked "458 VIN" (erroneously marked 1 foot too high) ..	457.322
T. 1 S., R. 8 W., sec. 16, southwest corner of; 8.25 feet east and 1 foot south of fence corner, at northeast corner of crossroads; iron post, marked "476 VIN"	475.778
T. 1 S., R. 9 W., sec. 21, northeast corner of; 5.5 feet west and 8 feet south of fence corner, at southwest corner of crossroads; iron post, marked "489 VIN"	488.721
T. 2 S., R. 9 W., sec. 17, 0.3 mile west of northeast corner of; 3 feet south and 2 feet west of fence corner, at southeast corner of crossroads; iron post, marked "447 VIN"	447.432
T. 3 S., R. 9 W., sec. 16, center of; 22.5 feet east and 2 feet north of fence corner, the most southerly of two corners formed by intersection of crossroads; iron post, marked "439 VIN"	438.766
T. 3 S., R. 10 W., sec. 13, $\frac{1}{4}$ corner south side of; 12.5 feet north and 1.75 feet west of fence corner, the most easterly of two formed by intersection of roads; iron post, marked "432 VIN"	432.362
Degonia, in stone post in front of Ash Iron Springs Hotel; aluminum tablet, marked "401 VIN"	401.218
Pigeon Creek, in top tier at north end of west abutment of bridge; aluminum tablet, marked "383 VIN"	383.185
Richland, in corner stone of I. O. O. F. building; aluminum tablet, marked "393 VIN"	393.234
Richland, on road from, to Rockford; in foundation at northeast corner of Mr. Cramer's storehouse; aluminum tablet, marked "381 VIN" ..	381.229
Africa, at east entrance of Africa schoolhouse, in stone step; aluminum tablet, marked "388 VIN"	388.103
Rock Hill, 330 feet north of Rock Hill railroad depot, 14 feet west of Louisville, Evansville and St. Louis track; in face of rock; aluminum tablet, marked "393 VIN"	393.318
T. 6 S., R. 5 W., secs. 4 and 5, under main street dividing; 270 rods north of Ohio River in west face of culvert; aluminum tablet, marked "391 VIN"	391.067
Crooked Creek, in east end of north abutment top tier of bridge; aluminum tablet, marked "386 VIN"	386.096
Tell City, 300 feet west of Louisville, Evansville and St. Louis side track on Tell street; in northeast corner of top tier of foundation of Acme Distillery; aluminum tablet, marked "395 VIN"	394.544
Rockport, in stone foundation on east wall and 6.5 feet south of north wall of court-house; aluminum tablet, marked "454 VIN"	454.410
Degonia Springs, T. 5 S., R. 7 W., sec. 27, about $\frac{1}{8}$ mile south of north-west corner of; at railroad crossing; iron post, marked "401 VIN" ..	400.962
Ash Iron Springs, between two wells in front of hotel, in square stone; aluminum tablet, marked "401 VIN"	401.218
T. 6 S., R. 7 W., sec. 11, near southwest corner of; at southeast corner of lot of Hale schoolhouse; iron post, marked "401 VIN"	400.724
Chrisney, T. 6 S., R. 6 W., sec. 11, in northwest $\frac{1}{4}$ of; in southwest corner of hotel lot; iron post, marked "464 VIN"	463.654
Gentryville, T. 5 S., R. 6 W., sec. 1; at crossroads 150 feet north of railroad track; iron post, marked "403 VIN"	403.188

	Feet.
Buffaloville, T. 5 S., R. 5 W., sec. 9; at northeast corner of depot grounds; iron post, marked "427 VIN"	426.543
Lamars, T. 5 S., R. 4 W., sec. 19, $\frac{1}{4}$ mile south of northwest corner of; on east side of street at southwest corner of store lot: iron post, marked "411 VIN"	410.994
Evanston, T. 5 S., R. 4 W., sec. 34, at southeast corner of store west of north and south road, 200 feet north of railroad crossing; iron post, marked "413 VIN"	412.755
Troy, T. 6 S., R. 4 W., sec. 13; in stone at southwest corner of Nester Hotel lot, northeast corner of Washington and Water streets; iron post, marked "391 VIN"	391.449
Newtonville, T. 6 S., R. 5 W., sec. 11, southeast corner of; at northeast corner of crossroads: iron post, marked "438 VIN"	437.978
Bristow, one-fourth mile northwest of, at northwest corner of intersection with road running west from road to Adyeville; iron post, marked "424 VIN"	423.959
St. Meinrad, T. 4 S., R. 4 W., sec. 14, about one-fourth mile south of northeast corner of; at northeast corner of post-office building at southwest corner of Main street and street south to Abby; iron post, marked "456 VIN"	456.292
Ferdinand, T. 2 S., R. 4 W., sec. 27, southwest quarter of; at northeast corner of lot 235, belonging to August Barth, at southwest corner of street crossing; iron post, marked "525 VIN"	524.595
Ferdinand station (Jonesboro post-office), T. 2 S., R. 5 W., sec. 34, north side of; at northwest corner of Peter Schnell's store, south of road and east of railroad; iron post, marked "486 VIN"	485.868
Dale, T. 4 S., R. 5 W., sec. 17; 6 feet west of the northwest corner of Heickelbech's store, at southeast corner of street crossing; iron post, marked "463 VIN"	462.878
Heilman, T. 4 S., R. 6 W., sec. 20, about one-fourth mile south of northeast corner of; at northeast corner of crossroads; iron post, marked "484 VIN"	484.395
Folsomville, T. 4 S., R. 7 W., sec. 34, about one-fourth mile south of northeast corner of; at northeast corner of Odd Fellows' Hall; iron post, marked "464 VIN"	463.938
Stendal, T. 3 S., R. 7 W., sec. 11, near $\frac{1}{4}$ corner, east side of; in front of Dr. Stork's office, at southwest corner of street crossing; iron post, marked "626 VIN"	626.459
T. 3 S., R. 6 W., sec. 9, near $\frac{1}{4}$ corner, east side of; at northwest corner of school lot on line between Dubois and Pike counties; iron post, marked "563 VIN"	563.075
Augusta, T. 2 S., R. 7 W., sec. 21; in northeast corner of hotel lot, at southwest corner of street crossing; iron post, marked "567 VIN"	567.149
Winslow, T. 1 S., R. 7 W., sec. 32; in stone window sill of brick store, at southeast corner of street crossing; aluminum tablet, marked "463 VIN"	462.558
Velpen, T. 2 S., R. 6 W., sec. 8; 200 feet east of station, 200 feet north of railroad, at southeast corner of G. W. Cockrel's clothing store; iron post, marked "490 VIN"	489.794
Ireland, T. 1 S., R. 5 W., sec. 19, near east line of; at southeast corner of post-office, northwest corner of street crossing; iron post, marked "479 VIN"	478.496
T. 1 S., R. 6 W., sec. 5, about one-fourth mile north of southeast corner of; Otwell, at northeast corner of William McCormic's brick store, at southwest corner of crossroads; iron post, marked "496 VIN"	496.394

Feet.

Algiers, T. 1 N., R. 7 W., sec. 27; at southwest corner of Dr. Harris's office, at northeast corner of street crossing; iron post, marked "527 VIN"	526.874
T. 1 N., R. 6 W., sec. 30; at southwest corner of school lot, at northeast corner of junction with road north from State road between Otwell and Algiers; iron post, marked "502 VIN"	501.885

KENTUCKY.

Lewisport, in southeast corner of Dentin's store, 39 feet east of door step; bronze tablet, marked "393 VIN"	392.848
Hawesville, in stone foundation at southeast corner of court-house; aluminum tablet, marked "422 VIN"	421.810
Pap Creek, 210 feet south of railroad bridge over, 20 feet west of railroad crossing, in Nat Young's field; iron post, marked "391 VIN"	391.142
Owensboro, in southeast corner of court-house square; meridian mark on stone post; aluminum tablet, marked "394 VIN"	394.155
Stanley, 50 feet south of railroad crossing, in southeast corner of forks of road; iron post, marked "385 VIN"	385.151
Sargho, west end of; in southeast corner of forks of road; iron post, marked "389 VIN"	389.013
Knottsville, 300 feet southeast of post-office, opposite hotel; iron post, marked "559 VIN"	558.970
Pellville, 1,000 feet east of crossroads, 10 feet south of Hardingburg road, in northeast corner of lot in which J. H. Abeuchain's house is situated; iron post, marked "531 VIN"	531.196

MINNESOTA.

ERRATA IN PREVIOUS REPORTS.

To the elevations published in the Appendix to the Twenty-first Annual Report apply the following correction, which is derived by the latest adjustment of the Coast and Geodetic Survey, pages 471 and 472: List of elevations based on St. Paul, correction, +1.040 foot.

WISCONSIN.

ERRATA IN PREVIOUS REPORTS.

The following clerical error appears in the Appendix to the Nineteenth Annual Report, page 259:

T. 6 N., R. 1 W., sec. 10; near center of road crossing, three-fourths mile east of Preston; iron post, marked "DBQ 1,118;" to be consistent with adjacent elevations in the same list should be marked "DBQ 1,138," and published elevation corrected by leveling of 1900 should read 1,138.252; but as further corrected by the latest adjustment of the Coast and Geodetic Survey this and all other elevations in same list (pp. 257-259) are to be raised 1.084 feet, the correction to the Mississippi River Commission bench mark at Dubuque, Iowa.

The following clerical errors occur in the Appendix to the Twenty-first Annual Report:

Page 469: Under title "Columbia and Marquette counties" for the

words "iron post," in the second line of the introductory paragraph, substitute the words "copper bolt." Change the description on page 470, seventh bench mark from top, to conform with introduction, omitting marked "*PRTG 791.*"

Page 470: Baraboo, at northeast corner of court-house; iron post, marked "*PRTG 890,*" should read: Baraboo, at northeast corner of court-house; bronze tablet, marked "*B 890,*" 896.760 feet.

NOTE.—The latter is identical with bench mark described in introduction to list on page 468; therefore, to raise the elevations in the list on page 468 to the Portage datum add 7.079 feet.

COLUMBIA, MARQUETTE, ADAMS, AND SAUK COUNTIES.

BRIGGSVILLE QUADRANGLE.

The elevations in the following list are in continuation of those published in the Appendix to the Twenty-first Annual Report, page 470, and are based upon a bench mark of the United States Lake Survey, being a copper bolt 4 feet below ground and 25 feet from wall of lock of canal connecting Wisconsin and Fox rivers at Portage, Wis., and 84.6 feet above recess of upper gate of new lock. The elevation of this is accepted as 791.243 feet above mean sea level.

The leveling was done under the direction of Mr. Robert Muldrow, topographer, by Mr. Robert Wipfler, levelman.

All bench marks are referred to Portage and are stamped with the letters "*PRTG*" in addition to the figures of elevation.

	Feet.
T. 12 N., R. 8 E., sec. 1, near $\frac{1}{4}$ corner, east side of; road crossing of Chicago, Milwaukee and St. Paul Railroad; top of rail.	827.3
T. 13 N., R. 8 E., sec. 21, near center of northwest $\frac{1}{4}$ of; at forks of road; iron post, marked " <i>801 PRTG</i> "	801.354
T. 14 N., R. 8 E., sec. 33, at southwest corner of; at northeast corner of intersecting roads; iron post, marked " <i>813 PRTG</i> "	812.644
T. 14 N., R. 7 E., sec. 33, near center of; north side of road; iron post, marked " <i>941 PRTG</i> "	941.205
T. 13 N., R. 7 E., sec. 6, near $\frac{1}{4}$ corner, west side of; east side of road; iron post, marked " <i>1016 PRTG</i> "	1,015.418
T. 13 N., R. 7 E., sec. 18, near southwest corner of; top of rail of Chicago, Milwaukee and St. Paul Railroad at wagon road crossing.	838.65
T. 12 N., R. 8 E., sec. 10, near center of; near forks of road; iron post, marked " <i>800 PRTG</i> "	799.634
T. 12 N., R. 7 E., sec. 11, about one-fourth mile east of northwest corner of; at intersection of roads; iron post, marked " <i>929 PRTG</i> "	929.543

IOWA, GRANT, AND LAFAYETTE COUNTIES.

MINERAL POINT QUADRANGLE.

The elevations published in the following list are based on a bench mark of the Mississippi River Commission at Dubuque, Iowa, in the

northeast corner of the custom-house, being a copper bolt marked U.S.P.B.M., the elevation of which is accepted as 644.565 feet above mean sea level, as corrected by the latest adjustment of the Coast and Geodetic Survey. They are in continuation of leveling reported upon in the Appendix to the Nineteenth Annual Report, on pages 258 and 259, after raising them 1.084 feet, the correction to the elevation there given for the Dubuque bench mark (see errata in previous reports).

The leveling was done under the direction of Mr. R. C. McKinney, topographer, by Mr. G. Stubblefield, levelman.

All bench marks are referred to Dubuque, and are marked with the letters "DUBQ," in addition to the figures of elevation. They are stamped 1 foot low, since the above correction was applied subsequent to the field work.

	Feet.
Fairplay; T. 7 N., R. 2 W., sec. 25, northwest $\frac{1}{4}$ of; 50 feet southeast of bridge; iron post, marked "862 DUBQ"	862.956
T. 1 N., R. 1 W., sec. 30, northeast $\frac{1}{4}$ of; 45 rods from corner of road intersection; nail in bedplate on abutment on southwest corner of road bridge	869.28
Benton, 22 feet north and 24 feet east of northeast corner of schoolhouse; iron post, marked "921 DUBQ"	922.023
T. 2 N., R. 1 E., sec. 16, $\frac{1}{4}$ corner east side of; 1.5 feet north and 0.5 foot west of southeast corner of schoolhouse yard; iron post, marked "973 DUBQ"	973.966
Belmont; about $\frac{1}{4}$ mile west of, in T. 3 N., R. 1 E., sec. 15, $\frac{1}{4}$ corner east side of; 1 foot north of west fence corner formed by junction of north and south and east and west roads; iron post, marked "1113 DUBQ" ..	1,114.075
Platteville, in foundation stone at northwest corner of city hall; bronze tablet, marked "992 DUBQ"	993.019
T. 3 N., R. 2 E., sec. 15, about center of southeast $\frac{1}{4}$ of; 14 feet east and 15 feet south of north fence corner formed by junction of east and west and north and south roads; iron post, marked "1056 DUBQ"	1,057.128
T. 4 N., R. 2 E., sec. 11, about $\frac{3}{8}$ mile west and 300 feet south of center of, at crossroads: 3.5 feet south and 2.7 feet east of northwest corner of schoolhouse yard; iron post, marked "1101 DUBQ"	1,102.043
Mineral Point, about 34 feet west of water tower, 1.7 feet east and 16.6 feet north of southwest corner of park; iron post, marked "1134 DUBQ"	1,135.150
T. 5 N., R. 2 E., sec. 9, about $\frac{1}{4}$ mile west of southeast corner of; 1.4 feet north and 7.3 feet east of south fence corner formed by junction of east and west with north and south roads; iron post, marked "1128 DUBQ"	1,129.069
T. 6 N., R. 2 E., sec. 28, $\frac{1}{4}$ corner east side of; about $\frac{3}{8}$ mile east of Edmund; 2 feet north and 16.6 feet east of east fence corner formed by junction of north and south with east and west roads; iron post, marked "1189 DUBQ"	1,190.088
Dodgeville, 10 feet 4 inches north and 8.7 feet east of northeast corner of court-house; iron post, marked "1220 DUBQ"	1,221.107
T. 6 N., R. 4 E., sec. 29, about $\frac{1}{2}$ mile south of center of; 2 feet west and 4.2 feet south of southeast fence corner formed by intersection of north and south with east and west roads; iron post, marked "1199 DUBQ"	1,200.207

	Feet.
T. 5 N., R. 4 E., sec. 18, near $\frac{1}{4}$ corner east side of; about $3\frac{1}{2}$ feet north and 1 foot west of corner of railroad fence, north of crossing and northeast of railroad; iron post, marked "947 DUBQ".....	948.155
T. 4 N., R. 3 E., sec. 16, about $\frac{1}{4}$ mile west of southeast corner of; 0.6 foot east and 15.6 feet south of south fence corner formed by junction of east and west with north and south roads; iron post, marked "1065 DUBQ".....	1,065.968
T. 4 N., R. 4 E., sec. 30, $\frac{1}{4}$ mile south of northeast corner of; 1.2 foot north and 13.2 feet west of west fence corner, at junction of north and south with east and west roads; iron post, marked "1106 DUBQ"....	1,107.225
T. 3 N., R. 4 E., sec. 9, about 334 feet south of northwest corner of; Fayette, 4.7 feet north and 0.7 foot west of northeast fence corner at cross roads; iron post, marked "1042 DUBQ".....	1,043.184
T. 3 N., R. 3 E., sec. 23, about $\frac{1}{4}$ mile east of center of; 1.6 feet west and 11.5 feet north of southwest fence corner at schoolhouse yard; iron post, marked "1026 DUBQ".....	1,027.138
Darlington, 195.7 feet north of northeast corner of court-house. Iron post, marked "866 DUBQ".....	867.179
T. 2 N., R. 4 E., sec. 17, about 60 rods west and $\frac{1}{4}$ mile south of center of; 1.2 feet north and 4.5 feet south of southeast fence corner formed by intersection of east and west road with the Chicago, Milwaukee and St. Paul Railroad; iron post, marked "814 DUBQ".....	815.109
Gratiot post-office, about $\frac{1}{4}$ mile west of in T. 1 N., R. 4 E., sec. 9, about 312 feet west and 556 feet south of $\frac{1}{4}$ corner north side of; on north side of road; iron post, marked "796 DUBQ".....	796.997
T. 1 N., R. 3 E., sec. 10, at northwest corner of; 2 feet west and 6 feet south of northwest corner of churchyard; iron post, marked "988 DUBQ".....	989.218
Schullsburg, about 60 feet west and 102 feet north of northwest corner of high school, in yard; iron post, marked "1019 DUBQ".....	1,020.059
T. 2 N., R. 2 E., sec. 29, northeast corner of; about 46.5 feet east and 36 feet north of northeast corner of O'Brien schoolhouse, in yard; iron post, marked "1083 DUBQ".....	1,083.439
Rewey, 2.4 feet south and 11.2 feet west of northeast corner of public schoolhouse yard; iron post, marked "1129 DUBQ".....	1,130.129
T. 5 N., R. 1 E., sec. 17, $\frac{1}{4}$ mile east of southwest corner of; about 1.5 feet north and 7.8 feet west of southeast corner of schoolhouse yard; iron post, marked "1094 DUBQ".....	1,095.120
T. 6 N., R. 1 E., sec. 29, at center of; 3.4 feet east and 3.8 feet south of northwest corner of schoolhouse yard at junction of north and south and east and west roads; iron post, marked "1201 DUBQ".....	1,202.167
Preston, $\frac{1}{2}$ mile east of; at northwest fence corner at crossroads; iron post, marked "1138 DUBQ".....	1,139.336
Montfort; crossmarkon northeast corner of stone base of most westerly column of the two nearest main tracks, for water tower of Chicago, Milwaukee and St. Paul Railway Company.....	1,189.335

IOWA.

ERRATA IN PREVIOUS REPORTS.

To the elevations published in the Appendix to the Twenty-first Annual Report apply the following correction, which is derived by the latest adjustment of the Coast and Geodetic Survey, pages 472-473: List of elevations based on Dubuque, correction, +1.084 feet.

IOWA—WISCONSIN.

ALLAMAKEE AND CLAYTON COUNTIES, IOWA; VERNON, CRAWFORD,
AND GRANT COUNTIES, WISCONSIN.

WAUKON QUADRANGLE.

The elevations published in the following list are based on the corrected elevations of several bench marks of the Mississippi River Commission between North McGregor, Iowa, and Victory, Wis. The corrections which were applied are the result of adjustment of precise leveling in the United States by the Coast and Geodetic Survey, in 1900. See Report for 1888-99, Appendix No. 8, page 513.

The leveling was under the direction of Mr. M. Hackett, topographer, by Mr. T. Burns, levelman.

All bench marks set in the course of this work are referred to a bench mark at Dubuque, Iowa, and are marked with the letters, "DUBQ" in addition to the figures of elevation. The elevations assumed for the base bench marks in the field were approximately 1 foot lower than as corrected by the Coast and Geodetic Survey adjustment. Therefore, the bench marks of this list are stamped in most cases 1 foot low.

IOWA.

	Feet.
North McGregor, 2 miles west of; at top of Hatch Hill, on south side of road, in northwest corner of yard at residence of J. K. Gray; iron post, marked "1096 DUBQ".....	1,096.764
T. 95 N., R. 4 W., sec. 4, 0.25 mile south of northwest corner of; Watson, 13 feet north of corner fence post at intersection of roads; iron post, marked "1179 DUBQ".....	1,179.847
Monona; in front of Chicago, Milwaukee and St. Paul station; top of rail.....	1,215.5
T. 95 N., R. 5 W., sec. 10, $\frac{1}{4}$ mile north of center of; 60 feet north of railroad track, southeast of W. Walsh's house; iron post, marked "1184 DUBQ".....	1,185.444
T. 96 N., R. 5 W., sec. 23, 700 feet east of $\frac{1}{4}$ corner west side of; north side of Hickory Creek, 80 feet southwest of northwest corner of bridge No. 16, south side of road; iron post, marked "787 DUBQ".....	787.651
T. 96 N., R. 4 W., sec. 8, south of $\frac{1}{4}$ corner west side of, on summit of hill north of Yellow River; iron post, marked "1099 DUBQ".....	1,100.540
T. 96 N., R. 4 W., sec. 2, about 1,000 feet west of southeast corner of; in northeast corner of yard of schoolhouse No. 1, north of road; iron post, marked "1137 DUBQ".....	1,137.725
T. 97 N., R. 3 W., sec. 16, $\frac{1}{4}$ mile south of center of; northwest of junction of roads; iron post, marked "1061 D".....	1,061.874
T. 98 N., R. 3 W., sec. 31, at $\frac{1}{4}$ corner east side of; near northwest corner of fence post of cemetery; iron post, marked "1148 DUBQ".....	1,149.840
Elon, 2,500 feet east of, in T. 98 N., R. 4 W., sec. 33, $\frac{1}{4}$ mile east of center of; northeast of fence post northeast of schoolhouse; iron post, marked "1238 DUBQ".....	1,238.626

	Feet.
T. 97 N., R. 5 W., sec. 16, $\frac{1}{4}$ corner west side of; just off the highway at northeast corner of crossroads; iron post, marked "1218 DUBQ".....	1, 219. 228
T. 98 N., R. 5 W., sec. 17, 1,300 feet northeast of center of; 15 feet south-east of northwest corner post of north fence line; iron post, marked "1320 DUBQ".....	1, 320. 949
Village Creek, T. 98 N., R. 4 W., sec. 19, 200 feet east of bridge over small tributary, on north side of road and south side of fence; iron post marked "834 DUBQ".....	835. 410
Village Creek, near northwest corner of schoolhouse; iron post, marked "646 DUBQ".....	646. 972
Lansing, southwest of intersection of Main and Front streets; top of hydrant.....	639. 779
Lansing, northeast of intersection of Main and Second streets; near southwest corner of implement warehouse of Nielande & Co.; alu-minum tablet, marked "653 DUBQ".....	654. 443
T. 99 N., R. 4 W., sec. 20, on east side of; 12 feet west of northeast corner post of cemetery; iron post, marked "1216 DUBQ".....	1, 217. 483
T. 99 N., R. 5 W., sec. 21, near $\frac{1}{4}$ corner on north side of; southwest of schoolhouse, 25 feet south of corner fence post; iron post, marked "1060 DUBQ".....	1, 060. 788
Newalbin schoolhouse, 22 feet northeast of northeast corner of; iron post, marked "652 DUBQ".....	652. 977
T. 100 N., R. 5 W., sec. 16, north of $\frac{1}{4}$ corner east side of; 60 feet south of southeast corner of schoolhouse, north side of road; iron post, marked "842 DUBQ".....	843. 468
T. 100 N., R. 4 W., sec. 16, at $\frac{1}{4}$ corner on south side of; bridge No. 3, over spring branch into Iowa River, in northwest corner of floor of, spike.....	638. 82

WISCONSIN.

T. 12 N., R. 7 W., sec. 34 (fourth prime meridian), 50 feet northeast of fifth post west of the fence corner west of Meddic's house, north of road; iron post, marked "853 DUBQ".....	854. 365
T. 12 N., R. 6 W., sec. 29, near east and west $\frac{1}{4}$ line of, just north of forks of road, north of schoolhouse No. 1, in yard; iron post, marked "1165 DUBQ".....	1, 166. 520
T. 11 N., R. 6 W., sec. 14, $\frac{1}{4}$ mile north of center of; 10 feet north of north gate post in front of house on east side of road; iron post, marked "1107 DUBQ".....	1, 167. 795
T. 10 N., R. 6 W., sec. 10, southwest of center of; 20 feet north of first post south of small gate in front of O. H. Olson's house, inside of fence; iron post marked "696 DUBQ".....	696. 887
T. 7 N., R. 6 W., sec. 22, in southwest $\frac{1}{4}$ of; road junction, commonly called "White's Corner," 10 feet north of guide post at northwest corner of; iron post, marked "1211 DUBQ".....	1, 212. 190
Eastman, T. 8 N., R. 5 W., sec. 18, in southwest $\frac{1}{4}$ of; about 800 feet north from F. H. Harvats & Co., blacksmiths and wagon makers, in southwest corner of schoolhouse yard; iron post, marked "1216 DUBQ".....	1, 216. 914
Lynxville, T. 9 N., R. 6 W., sec. 23, in southwest corner of N. E. school-house yard; iron post, marked "681 DUBQ".....	682. 492

MISSOURI.

ERRATA IN PREVIOUS REPORTS.

To the elevations published in the Appendix to the Twenty-first Annual Report apply the following correction, which is derived by the latest adjustment of the Coast and Geodetic Survey, pages 474-475: List of elevations based on St. Louis City Directrix, correction +1.098 feet.

CLARK, SCOTLAND, SCHUYLER, ADAIR, MACON, KNOX, AND LEWIS COUNTIES.

KAHOKA AND EDINA QUADRANGLES.

The elevations published in the following list are based on a bench mark of the United States Engineer Corps (Mississippi River Commission) at Alexandria, Mo., in T. 64 N., R. 5 W., sec. 8, being an eyebolt in top of mooring stone at boat landing. The elevation of this, as corrected by the latest adjustment of the Coast and Geodetic Survey, is accepted as 493.369 feet above mean sea level.

The leveling was done under the direction of Mr. Paul Holman, topographer, by Mr. H. V. Rees, levelman.

All bench marks dependent on this datum are marked with the letter "A" in addition to the figures of elevation. They are stamped in general 1 foot too low, as the Coast and Geodetic Survey correction of 1.079 feet was applied subsequent to the field work.

	Feet.
T. 60 N., R. 6 W., sec. 7, in west part of northeast $\frac{1}{4}$ of; in stone foundation on east side of large brick house of J. W. Willows, commonly known as the "Old Tate place;" bronze tablet, marked "615 A"	616.093
T. 60 N., R. 7 W., sec. 7, in southeast $\frac{1}{4}$ of; in east face of solid stone foundation of Reformed Lutheran Church; bronze tablet, marked "687 A"	688.377
T. 60 N., R. 8 W., sec. 2, $\frac{1}{4}$ mile east of southwest corner of; cross on corner stone	654.15
T. 60 N., R. 8 W., sec. 10, $\frac{1}{4}$ corner east side of; on property of William Jusfram; iron post, marked "681 A"	682.227
T. 60 N., R. 9 W., sec. 2, $\frac{1}{4}$ mile south of northeast corner of; on section line at crossroads; oak tree, copper nail in root of	725.24
T. 60 N., R. 9 W., sec. 2, near center of; bridge over Troublesome Creek, floor of	630
T. 60 N., R. 9 W., sec. 4, $\frac{1}{4}$ corner west side of, at crossroads; cross on corner stone	689.70
T. 60 N., R. 9 W., sec. 8, in north part of southeast $\frac{1}{4}$ of; on place of W. E. Piner, at side of road under hedge fence north of gateway; iron post, marked "681 A"	681.767
T. 61 N., R. 6 W., sec. 8, $\frac{1}{4}$ mile east of center of, at crossroads; cross cut in top of corner stone	652.17
T. 61 N., R. 6 W., sec. 20, in northern part of southeast quarter of; on east side of large brick house owned by Eliza Glavin, in stone casing over cellar window; bronze tablet, marked "640 A"	640.104

	Feet.
T. 61 N., R. 7 W., sec. 4, $\frac{1}{4}$ corner east side of, at crossroads; top point of corner stone	661.42
T. 61 N., R. 7 W., sec. 20, $\frac{1}{4}$ corner, south side of, cross on corner stone.	650.20
T. 61 N., R. 7 W., sec. 33, $\frac{1}{4}$ corner, south side of, at cross roads; cross on top point of corner stone	630.24
Lewiston, T. 61 N., R. 8 W., sec. 17; on bank building at southeast corner of Main and Elm streets; aluminum tablet, marked "725 A"	725.887
T. 61 N., R. 8 W., sec. 32, $\frac{1}{4}$ corner south side of cross on corner stone	718.975
La Belle, T. 61 N., R. 9 W., sec. 5, in northwest corner of stone foundation of bank; aluminum tablet, marked "738 A"	738.381
T. 61 N., R. 10 W., sec. 4, northwest corner of; cross on corner stone	752.34
T. 61 N., R. 10 W., sec. 9, southwest corner of northwest $\frac{1}{4}$ of, at northeast corner of cross roads; iron post, marked "696 A"	697.140
T. 61 N., R. 11 W., sec. 9, southeast $\frac{1}{4}$ of; in corner of Robert Hysell's door yard; iron post, marked "735 A"	736.484
T. 61 N., R. 11 W., sec. 12, $\frac{1}{4}$ mile west of southeast corner of; cross on corner stone	775.21
T. 61 N., R. 11 W., sec. 18, southeast corner of, at cross roads; cross on corner stone	792.47
T. 61 N., R. 11 W., sec. 18, southwest corner of; cross on corner stone.	822.12
T. 61 N., R. 12 W., sec. 17, at southwest corner of; about 200 yards east of road, in corner of door yard of J. C. Beck; iron post, marked "855 A"	856.262
T. 61 N., R. 12 W., sec. 22, $\frac{1}{4}$ corner north side of; cross on corner stone.	838.13
T. 61 N., R. 13 W., sec. 5, southwest corner of; cross on corner stone.	828.22
T. 61 N., R. 13 W., sec. 11, in southwest corner of; in corner of dooryard of Thomas Powers; iron post, marked "874 A"	875.383
Gibbs, T. 61 N., R. 14 W., sec. 12, in southwest $\frac{1}{4}$ of; in northwest face of Gibbs Savings Bank; aluminum tablet, marked "910 A"	911.492
T. 62 N., R. 6 W., sec. 29, near northwest corner of; in northwest corner of yard of M. L. Spaulding; iron post, marked "637 A"	636.543
T. 62 N., R. 7 W., sec. 16, about center of southeast $\frac{1}{4}$ of; 40 feet west of lane leading to L. E. Moore's house, on north side of road at foot of choke cherry tree; iron post, marked "671 A"	671.034
Bunker Hill, T. 62 N., R. 8 W., sec. 11, southeast $\frac{1}{4}$ of; in southeast corner of dooryard of George Nelson; iron post, marked "701 A"	701.825
T. 62 N., R. 9 W., sec. 20, northeast part of; in southeast corner of dooryard of H. P. Gregory; iron post, marked "674 A"	675.119
Knox City, T. 62 N., R. 10 W., sec. 28, southeast of center of; in west side of Cater & Hunsaker's store; aluminum tablet, marked "766 A"	766.708
Edina, T. 62 N., R. 11 W., sec. 18; top of inside rail, opposite center of depot	734.6
Edina, T. 62 N., R. 11 W., sec. 19, northwest $\frac{1}{4}$ of; 50 feet east of stand in public square, in meridian post; aluminum tablet, marked "814 A"	815.243
T. 62 N., R. 12 W., sec. 21, in west center of northeast $\frac{1}{4}$ of; about 30 yards south of R. R. track, in road corner; iron post, marked "842 A"	842.729
Brashear, T. 62 N., R. 13 W., sec. 24, in center of northwest $\frac{1}{4}$ of; in casing of east window on north side of schoolhouse; aluminum tablet, marked "868 A"	869.288
T. 62 N., R. 14 W., sec. 22, in northeast $\frac{1}{4}$ of; in corner of road adjacent to property of G. M. Lec; iron post, marked "921 A"	922.066
T. 63 N., R. 6 W., sec. 6; schoolhouse No. 1, in southeast corner of stone foundation of; bronze tablet, marked "538 A"	537.686

	Feet.
St. Patrick, T. 63 N., R. 7 W., sec. 13, northwest $\frac{1}{4}$ of: near post-office, top of solid rock at corner of fence	677.46
Derrahs, T. 63 N., R. 7 W., sec. 27, southwest $\frac{1}{4}$ of; on north side of road, in fence corner southeast of schoolhouse; iron post, marked "609 A" ..	609.393
T. 63 N., R. 8 W., sec. 6, $\frac{1}{4}$ corner, west side of; cross on top of corner stone	722.99
Williamstown, T. 63 N., R. 8 W., sec. 20, southeast $\frac{1}{4}$ of; in west side of stone foundation of Southern Methodist Church; bronze tablet, marked "721 A"	722.507
Laura, T. 63 N., R. 8 W., sec. 30, in southwest $\frac{1}{4}$ of; in front of post-office, top of solid stone	669.75
T. 63 N., R. 9 W., sec. 28, $\frac{1}{4}$ corner west side of; at northeast corner of crossroads, on property of J. A. Arthur; iron post, marked "709 A" ..	710.32
T. 63 N., R. 9 W., sec. 33, $\frac{1}{4}$ corner west side of; cross on corner stone ..	715.27
T. 63 N., R. 10 W., sec. 5, $\frac{1}{4}$ corner north side of, on township line; cross on corner stone	676.18
T. 63 N., R. 10 W., sec. 9, southwest corner of; cross on corner stone ..	761.21
Colony, T. 63 N., R. 10 W., sec. 23, near center of; in north face of stone foundation of H. S. Coleman's house; bronze tablet, marked "745 A"	746.161
T. 63 N., R. 11 W., sec. 6, in southeast corner of southeast $\frac{1}{4}$ of; in corner of dooryard of property of M. Beck; iron post, marked "777 A"	778.230
Greensburg, T. 63 N., R. 12 W., sec. 2, northwest $\frac{1}{4}$ of; in corner of lower step of post-office, copper nail ..	798.07
T. 63 N., R. 12 W., sec. 9, near northwest corner of; in west face of stone foundation of James McWilliam's house; aluminum tablet, marked "845 A"	846.148
T. 63 N., R. 13 W., sec. 7, center of; cross on corner stone	896.15
Adair, T. 63 N., R. 13 W., sec. 20, in northeast $\frac{1}{4}$ of; in west face of brick foundation of Catholic parsonage; aluminum tablet, marked "926 A" ..	927.234
T. 63 N., R. 14 W., sec. 26, $\frac{1}{4}$ mile east of center of; cross on corner stone	944.35
Clay; T. 63 N., R. 14 W., sec. 34, in northwest $\frac{1}{4}$ of; about 80 yards east of post-office, near large oak tree; iron post, marked "931 A"	932.181
Alexandria, T. 64 N., R. 5 W., sec. 8; in top of mooring stone at boat landing eyebolt (Mississippi River Commission bench mark)	493.369
T. 64 N., R. 6 W., sec. 5, near southwest corner of northwest $\frac{1}{4}$ of; White's bridge over Fox River, floor of	518
T. 64 N., R. 6 W., sec. 8, near northwest corner of, at cross roads; in stone step of west door of Fox River church; aluminum tablet, marked "533 A"	532.625
T. 64 N., R. 7 E., sec. 17, near center of; bridge over Honey Creek, floor of	617
Antioch, T. 64 N., R. 7 W., sec. 20, in southeast $\frac{1}{4}$ of; in northwest corner of Elwell's store; bronze tablet marked "698 A"	697.860
T. 64 N., R. 8 W., sec. 6, near center of; bridge over Little Wyaconda River, floor of	640
T. 64 N., R. 8 W., sec. 15, near center of; bridge over Wyaconda River, floor of	622
Neeper, T. 64 N., R. 8 W., sec. 21, center of; in southeast corner of churchyard, iron post, marked "730 A"	730.742
Fairmont, T. 64 N., R. 9 W., sec. 21, southwest $\frac{1}{4}$ of; in northeast corner of public square; iron post, marked "780 A"	780.733
T. 64 N., R. 9 W., sec. 26, northwest corner of; bridge over Little Wyaconda River, floor of	666

	Feet.
T. 64 N., R. 10 W., sec. 26, $\frac{1}{4}$ corner west side of; cross on corner stone.	672.59
T. 64 N., R. 10 W., sec. 28, in south part of southwest $\frac{1}{4}$ of; in southwest corner of dooryard of property of Mary Boyer; iron post, marked "652 A"	653.159
T. 64 N., R. 11 W., sec. 8, southeast corner of; cross on corner stone.	787.06
Sandhill, T. 64 N., R. 11 W., sec. 33, center of; 200 yards from post-office, in brick foundation of house of S. P. Childers; aluminum tablet, marked "802 A"	803.549
T. 64 N., R. 12 W., sec. 7, center of southwest $\frac{1}{4}$ of; in corner of dooryard of William Purvis; iron post, marked "837 A"	837.665
T. 64 N., R. 13 W., sec. 32, $\frac{1}{4}$ mile east of center of; cross on corner stone	915.03
T. 64 N., R. 13 W., sec. 35, south center of southwest $\frac{1}{4}$ of; corner of road on Fred Kaser's property; iron post, marked "870 A"	871.561
Wilmathsville, T. 64 N., R. 14 W., sec. 25, northwest of $\frac{1}{4}$ corner east side of; at southeast corner of Union church; iron post, marked "939 A"	939.587
St. Francisville, T. 65 N., R. 6 W., sec. 3, southwest $\frac{1}{4}$ of; 1 block northwest of postoffice, in southwest corner of H. C. Campbell's residence; aluminum tablet, marked "536 A"	542.237
St. Francisville, T. 65 N., R. 6 W., sec. 3, in southwest $\frac{1}{4}$ of; Des Moines River, surface of water	497
Wayland, T. 65 N., R. 6 W., sec. 32, in northwest $\frac{1}{4}$ of; on northwest corner of depot platform; copper nail	535.81
Kahoka, T. 65 N., R. 7 W., sec. 24, at depot; top of inside rail	697.2
T. 65 N., R. 7 E., sec. 26, near center of; top of rail at Keokuk and Western Railroad bridge, "A 16"	582.4
T. 65 N., R. 7 E., sec. 36, in northeast $\frac{1}{4}$ of; in center of Keokuk and Western railroad bridge "A 14," over Fox River, top of rail	526.9
Medill, T. 65 N., R. 8 W., sec. 16, in front of station; top of inside rail	703.5
Medill, T. 65 N., R. 8 W., sec. 16; 450 feet west of crossing of Keokuk and Western and Santa Fe railroads, in masonry around base of signal post; aluminum tablet, marked "703 A"	703.915
Kahoka, T. 65 N., R. 8 W., sec. 24, at southwest corner of county courthouse in window ledge; aluminum tablet, marked "704 A"	704.816
Luray, T. 65 N., R. 9 W., sec. 10, in southeast $\frac{1}{4}$ of; in northwest corner of Baptist Church foundation, bronze tablet, marked "746 A"	746.734
Wyaconda, T. 65 N., R. 9 W., sec. 32, southwest $\frac{1}{4}$ of; in northeast corner of depot platform; copper nail	757.80
T. 65 N., R. 10 W., sec. 7, $\frac{1}{4}$ corner west side of, at crossroads; cross on corner stone	753.29
T. 65 N., R. 10 W., sec. 20, southwest corner of, at crossroads; cross on corner stone	757.97
T. 65 N., R. 10 W., sec. 32, northeast corner of, at crossroads; cross on corner stone	763.60
T. 65 N., R. 10 W., sec. 34, near southwest corner of; bridge over Bear Creek, floor of	687
T. 65 N., R. 11 W., sec. 3, center of; cross on corner stone	786.81
Memphis, T. 65 N., R. 11 W., sec. 7; at depot, top of inside rail	757
Memphis, T. 65 N., R. 11 W., sec. 7; in schoolhouse yard, bronze tablet in top of meridian post, marked "786 A"	787.239
T. 65 N., R. 11 W., sec. 30, $\frac{1}{4}$ corner east side of; cross on corner stone	745.78
T. 65 N., R. 11 W., sec. 32, $\frac{1}{4}$ mile west of southeast corner of; on township line at corner of fence at T road to south; cross on large stone	782.78

	Feet.
Crawford, T. 65 N., R. 12 W., sec. 5, northwest $\frac{1}{4}$ of; in northwest corner of depot platform, copper nail.....	734
T. 65 N., R. 12 W., sec. 25 in southern part of northwest $\frac{1}{4}$ of; in northwest corner of Miller schoolhouse yard, iron post, marked "796 A" ..	797.105
T. 65 N., R. 13 W., sec. 3, in southern part of northeast $\frac{1}{4}$ of; in corner of S. B. Pile's orchard; iron post, marked "855 A".....	856.044
T. 65 N., R. 13 W., sec 23, $\frac{1}{4}$ mile west of southeast corner of; cross on corner stone.....	921.31
T. 65 N., R. 14 W., sec. 26, in east part of southwest $\frac{1}{4}$ of; at southwest corner of crossroads, adjacent to property of J. N. Cannon, in large stone; bronze tablet, marked "829 A".....	830.552
T. 65 N., R. 14 W., southeast corner of; at crossroads, cross on corner stone.....	901
Vincennes, T. 66 N., R. 6 W., sec. 22, southwest $\frac{1}{4}$ of; in northwest corner of foundation of house of R. Sargent; aluminum tablet, marked "555 A".....	555.746
Revere, T. 66 N., R. 7 W., sec. 28, in northwest $\frac{1}{4}$ of; in middle of south side of stone foundation of Hotel Revere; aluminum tablet, marked "682 A".....	683.481
T. 66 N., R. 8 W., sec. 28, $\frac{1}{4}$ corner south side of; in southwest corner of dooryard of J. O. Murphy; iron post, marked "713 A".....	713.654
T. 66 N., R. 9 W., sec. 28, $\frac{1}{4}$ corner west side of; on property of J. S. Snyder, iron post, marked "733 A".....	734.300
T. 66 N., R. 9 W., sec. 33, $\frac{1}{4}$ mile east of southwest corner of, at crossroads, cross on corner stone.....	705.67
Granger, T. 66 N., R. 10 W., sec. 2, in southwest corner of foundation of Granger Exchange Bank; bronze tablet, marked "761 A".....	761.766
T. 66 N., R. 10 W., sec. 26, $\frac{1}{4}$ mile east of northwest corner of; in fence corner on property of Joseph Miller; iron post, marked "745 A".....	746.319
T. 66 N., R. 11 W., sec. 35, in southwest corner of; at crossroads; cross on corner stone.....	761.93
T. 66 N., R. 11 W., sec. 34, near center of; adjacent to land owned by W. H. Summers; iron post, marked "760 A".....	761.567
T. 66 N., R. 12 W., sec. 33, southwest part of northwest $\frac{1}{4}$ of; on John Ridge's property in northeast corner of crossroads; iron post, marked "790 A".....	790.690
Downing, T. 66 N., R. 13 W., sec. 33, in northwest $\frac{1}{4}$ of; in foundation of store opposite depot; bronze tablet, marked "875 A".....	875.716
T. 66 N., R. 14 W., sec. 26, near center of northeast $\frac{1}{4}$ of; at northeast corner of church; iron post, marked "900 A".....	901.140
T. 66 N., R. 14 W., sec. 35, center of, at crossroads; cross on corner stone.....	925.04

MISSOURI-KANSAS.

JASPER COUNTY, MO.; CHEROKEE COUNTY, KANS.

JOPLIN DISTRICT.

The elevations published in the following list are based on bench mark "C 111" of the Coast and Geodetic Survey at Carthage, Mo., at the southwest corner of Main and Limestone streets, being a cross cut on rounded top of 6 by 6 inch limestone post buried in the ground

2.3 feet west of intersection of inside lines of sidewalk. The elevation of this bench mark, as corrected by the latest adjustment of that survey, is accepted as 942.037 feet above mean sea level.

The leveling was done under the direction of Mr. W. H. Griffin, topographer, by Mr. D. C. Wray, levelman.

All bench marks dependent upon this datum are stamped with the letters "CRTHG" in addition to the figures of elevation.

MISSOURI.

	Feet.
Carthage, at southwest corner of Main and Limestone streets; limestone post (Coast and Geodetic Survey)	942.030
Carthage, at west side of City park, east side of Harrison avenue, 45 feet north of north line of Chestnut street; in south meridian post; aluminum tablet, marked "1009 CRTHG"	1,008.946
Oronogo, T. 29 N., R. 33 W., sec. 36, southeast $\frac{1}{4}$ of; on Central avenue, in cap stone at north wing wall at west abutment of steel viaduct over Missouri Pacific Railroad; aluminum tablet, marked "975 CRTHG"	975.321
T. 28 N., R. 33 W., sec. 6, northwest corner of; 1 mile northwest of Carl Junction, 100 feet east of crossroads; iron post, marked "884 CRTHG"	884.313
Duenweg, T. 27 N., R. 32 W., sec. 4, southeast corner of, $\frac{1}{2}$ mile west of hotel, at corner of fence northwest of crossroads; iron post, marked "1075 CRTHG"	1,075.271
T. 26 N., R. 33 W., sec. 9, northwest corner of; 10 feet south of corner of fence southeast of Seneca and Box Springs crossroads; iron post, marked "1142 CRTHG"	1,141.836
Waco, 1 mile east of; in T. 29 N., R. 34 W., sec. 13, northeast corner of, 60 feet west and 30 feet south of corner stone; iron post, marked "868 CRTHG"	868.490
Alba, T. 29 N., R. 32 W., sec. 15, northwest $\frac{1}{4}$ of; in southwest corner of schoolhouse grounds; iron post, marked "984 CRTHG"	984.368
Pleasant View Church, T. 29 N., R. 31 W., sec. 12, southeast corner of; at east end of gate into yard; iron post, marked "1006 CRTHG"	1,006.295
Webb City, at west side of Allen street, between Main and Daugherty streets, in northeast corner of Exchange Bank Building; aluminum tablet, marked "1003 CRTHG"	1,003.350
T. 27 N., R. 31 W., sec. 1, northeast corner of; on south line of east and west road, 210 feet west of west line of north and south road; iron post, marked "1074 CRTHG"	1,074.025
T. 26 N., R. 31 W., sec. 1, northeast corner of; on west line of north and south road and 25 feet south of south line of east and west road; iron post, marked "1160 CRTHG"	1,160.119
T. 26 N., R. 32 W., sec. 1, northeast corner of; on south line of east and west road and 15 feet west of west line of north and south road; iron post, marked "1137 CRTHG"	1,136.773
Joplin, at southeast corner of Virginia avenue and Seventh street, in northwest corner of court-house foundation; aluminum tablet, marked "1009 CRTHG"	1,008.516

KANSAS.

T. 35 S., R. 25 E., sec. 11, northeast corner of; 24 feet west of corner stone; iron post, marked "1016 CRTHG"	1,016.057
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Feet.

Galena, on west side of Euclid avenue, between Seventh and Eighth streets, 2 feet north of southeast corner of foundation of schoolhouse; aluminum tablet, marked "976 CRTHG"	976.187
Baxter Springs, 51 feet west of southeast corner of city hall, in third course of stone below water table; aluminum tablet, marked "842 CRTHG"	842.346
T. 33 S., R. 25 E., sec. 12, southeast $\frac{1}{4}$ of; 45 feet south of corner stone, at west side of State line road; iron post, marked "914 CRTHG"	913.881
T. 32 S., R. 25 E., sec. 19, northwest corner of; 4 feet east of corner fence post southeast of crossroads; iron post, marked "904 CRTHG"	903.795
T. 33 S., R. 24 E., sec. 1, northeast corner of; 40 feet south and 15 feet west of corner stone in center of crossroads; iron post, marked "893 CRTHG"	892.843
T. 34 S., R. 24 E., sec. 1, northeast corner of; 40 feet south and 30 feet west of corner stone in center of crossroads; iron post, marked "862 CRTHG"	861.760

ARKANSAS.

ERRATA IN PREVIOUS REPORTS.

To the elevations published in the Appendix to the Twenty-first Annual Report apply the following corrections, which are derived by the latest adjustment of the Coast and Geodetic Survey:

	Correction. Feet.
Page 476: List of elevations based on Fayetteville	+1.589
Pages 477, 478, 479: List of elevations based on Hot Springs, derived from Coast and Geodetic Survey bench mark at Little Rock	+0.959

MISSOURI-ARKANSAS.

BERRY COUNTY, MO.; CARROLL, MADISON, AND WASHINGTON COUNTIES,
ARK.

EUREKA SPRINGS QUADRANGLE.

The elevations in the following list are based upon and adjusted between two bench marks of the Coast and Geodetic Survey, namely, bench mark No. "CXIII," the center of a cross on the end of copper bolt leaded in the west side wall of the brick building at the corner of Main and Seventh streets, Seligman, Mo., owned and occupied by A. J. Dean, M. D., the elevation of which is accepted as 1,542.761 feet above mean sea level; and bench mark No. "CXXI," the center of a cross cut on the south side of main entrance to the Arkansas State University building at Fayetteville, Ark., the elevation of which is accepted as 1,454.079 feet above mean sea level. The connection with the latter is made through leveling reported upon in the Appendix to the Twenty-first Annual Report, page 476, corrected in accordance with note under "errata in previous reports."

The leveling was done under the direction of Mr. H. B. Blair, topographer, by Messrs. J. E. Smith, C. C. Curry, G. E. Diehl, and Jerry Boyd, levelmen.

All bench marks are referred to Fayetteville and are stamped with the letters "FTVL," in addition to the figures of elevation. They are stamped 1 and 2 feet too low, since the Coast and Geodetic Survey correction was applied subsequent to the field work.

MISSOURI.

	Feet.
Seligman, in northwest corner of brick building opposite Linden Hotel, in sixth tier of brick from ground and second brick from corner; brass plug, Coast and Geodetic Survey bench mark.....	1,542.761
Seligman, 0.8 mile south of, 23 feet from west end of trestle on Eureka Spring Railroad; chisel mark on upper face of rock.....	1,441.16

ARKANSAS.

Missouri and Arkansas State line, 1.2 miles south of, 25 feet north of Berry switch on St. Louis and Northern Arkansas Railroad, in side of rock 1 foot above ground; bronze tablet, marked "998 FTVL".....	999.155
Beaver, T. 21 N., R. 26 W., sec. 20; 33 feet from east pier of bridge over White River, in south wall of the Narrows, 2.4 feet above ground; aluminum tablet, marked "929 FTVL".....	930.575
Eureka Springs, 8 feet northwest of corner of depot; end of bolt in top of stone hitching post.....	1,130.13
Eureka Springs, on east front of Crescent Hotel, 9 feet from northeast corner of dining hall, 3.8 feet above ground; aluminum tablet, marked "1461 FTVL".....	1,462.414
White River, T. 20 N., R. 27 W., sec. 29; about 300 yards east of Knox Ferry and 11 feet northwest of large oak tree; in side of sandstone rock; bronze tablet, marked "1016 FTVL".....	1,017.861
Huntsville, T. 17 N., R. 26 W., sec. 34; in east side of southeast corner of foundation to court-house; bronze tablet, marked "1451 FTVL".....	1,452.661
T. 16 N., R. 25 W., sec. 20; south side of; about 200 yards south of Whartons Creek schoolhouse, near elm tree; in side of rock about $\frac{1}{2}$ foot above ground; bronze tablet, marked "1352 FTVL".....	1,353.610
T. 16 N., R. 26 W., sec. 23 center of north $\frac{1}{2}$ of in top of projecting rock on west side of and 150 yards from War Eagle Creek, on main Huntsville and Aurora road; bronze tablet, marked "1321 FTVL".....	1,322.741
T. 17 N., R. 26 W., sec. 10; north bank of War Eagle Creek, at ford, on Huntsville and Eureka Springs road, in top of rock; bronze tablet, marked "1222 FTVL".....	1,223.689
T. 18 N., R. 26 W., sec. 22, east side of; near old storehouse, at junction of road from Clifty with Huntsville and Eureka Springs road; iron post, marked "1602 FTVL".....	1,603.618
T. 19 N., R. 26 W., sec. 33, southwest corner of; on Huntsville and Eureka Springs road; iron post, marked "1568 FTVL".....	1,569.556
Goshen, T. 17 N., R. 28 W., sec. 32; 700 feet northeast of flour mill, in south face of ledge of natural rock on northwest side of Goshen-Hindsville public road; aluminum tablet, marked "1181 FTVL".....	1,182.772
Wesley, T. 16 N., R. 28 W., sec. 26; school district No. 56, in second brick from bottom and southeast corner of brick schoolhouse; bronze tablet, marked "1273 FTVL".....	1,275.076

Feet.

Drakes Creek, T. 16 N., R. 27 W., sec. 32; 500 feet east of post-office, in south face of natural ledge of rock on Aurora road, 300 feet east of junction with Huntsville road; aluminum tablet, marked "1284 FTVL"	1,286.070
Hindsville, T. 17 N., R. 27 W., sec. 16, center of north half of; iron post, marked "1366 FTVL"	1,367.527
Clifty, T. 18 N., R. 27 W., sec. 26, northwest $\frac{1}{4}$ of; 1,300 feet north of Parker's ford of War Eagle Creek, in east face of natural ledge of granite on west side of Hindsville-Clifty road; bronze tablet, marked "1218 FTVL"	1,219.663
Canuck, T. 19 N., R. 27 W., sec. 33; 10 feet east of building owned by Sam Cook, in south face of ledge of natural rock and southeast corner of post-office; aluminum tablet, marked "1497 FTVL"	1,499.138
War Eagle, T. 19 N., R. 28 W., sec. 34, near southeast corner of; 180 feet north of post-office, 40 feet east of old building, in west face of ledge of natural flint rock; bronze tablet, marked "1156 FTVL"	1,157.233
Spring Valley, T. 17 N., R. 28 W., sec. 2; 70 feet west of post-office, 5 feet north of spring owned by A. Sanders, in south face of ledge of natural limestone rock; copper bolt, marked "1301 FTVL"	1,302.225

ROCKY MOUNTAIN SECTION OF TOPOGRAPHY.

In this section, under the direction of Mr. E. M. Douglas, geographer in charge, spirit leveling was continued for the control of the regular topographic work executed during the year in the various localities as listed below. In addition, leveling was carried on in the following localities during the year 1900, but as the field work in these localities is not yet completed the results will not be published until later:

Texas—Grayson, Fannin, and Lamar counties.

Utah—Salt Lake, Summit, and Wasatch counties.

Montana—Teton, Silverbow, Deer Lodge, Powell, Lewis and Clarke, and Jefferson counties.

Wyoming—Uinta County.

TEXAS.

ERRATA IN PREVIOUS REPORTS.

To the elevations listed in the Appendix to the Twenty-first Annual Report, pages 483-486, derived from a bench mark of the United States Coast and Geodetic Survey at Fort Smith, Ark., add 1.660 feet to raise them to the corrected elevation of that bench mark as derived by the latest adjustment of that survey.

MONTANA.

MISSOULA AND RAVALLI COUNTIES.

BONNER QUADRANGLE.

The elevations in the following list are based on a tablet set on the right side of entrance to the First National Bank building, Missoula, Mont., and marked "3201 T."

The elevation of this datum was determined by Mr. H. S. Crowe, levelman, and was found to be 3,201.400 feet above mean sea level at Tacoma, Wash. (See Appendix to the Twentieth Annual Report of the United States Geological Survey, p. 530.)

The leveling was done in 1898 by Mr. J. B. Whitlock, and in 1900 by Mr. John T. Stewart, under the general direction of Mr. E. M. Douglas, geographer.

All bench marks depending on this datum are marked "MSLA" in addition to the figures of elevation.

MISSOULA TO CARLAN, ALONG NORTHERN PACIFIC RAILROAD.

	Feet.
Missoula. First National Bank building, southeast corner Higgins avenue and Front street, right side of entrance; bronze tablet, marked "3201 T" (Appendix to Twentieth Ann. Rept.)	3,201.400
Missoula; Montana State University building, left side of main entrance; bronze tablet, marked "3225 T" (Appendix to Twentieth Ann. Rept.)	3,225.415
Missoula; Montana State University grounds; south meridian mark, marked "3220 MSLA"	3,219.974
Missoula; Montana State University grounds; north meridian mark, marked "3220 MSLA"	3,220.155
Missoula, 4 miles east of; at point where county and toll roads fork, 100 feet west of railroad; iron post, marked "3249 MSLA"	3,248.490
Bonner; southeast corner of Margaret Hotel grounds; iron post, marked "3297 MSLA"	3,297.429
Turah; southeast corner of section house; iron post, marked "3325 MSLA"	3,325.395
Clinton, 3 miles west of; 20 feet north of road at railroad crossing; iron post, marked "3416 MSLA"	3,416.363
Clinton; northeast corner of Federation of Labor hall, 200 feet west of railroad track, opposite milepost 107; iron post, marked "3467 MSLA"	3,467.359
Clinton, 3 miles southeast of; 1,000 feet south of milepost 104, 50 feet east of crossing of railroad by wagon road; iron post, marked "3509 MSLA"	3,509.324
Scepter Spur, 100 feet south of county bridge over Hell Gate River; iron post, marked "3544 MSLA"	3,544.324
Bonita; southeast corner of post-office; iron post, marked "3582 MSLA"	3,582.292
Bonita, 3 miles east of; south side of road, at gate to Will's ranch, 300 feet north of old Corduroy bridge over Hell Gate River; iron post, marked "3648 MSLA"	3,648.299
Carlan; 200 feet north of section house, north side of road; iron post, marked "3696 MSLA"	3,696.262

MISSOULA TO STEVENSVILLE, ALONG BITTERROOT BRANCH OF NORTHERN PACIFIC RAILROAD.

Bitterroot station, $\frac{1}{2}$ mile north of; 35 feet northwest of road crossing, 400 feet south of milepost 3; iron post, marked "3172 MSLA"	3,171.876
Buckhouse ranch, 600 feet southeast of; 75 feet northwest of west end of wagon bridge, 150 feet east of road crossing; iron post, marked "3140 MSLA" (U.S.G.S. hydrographic station)	3,139.762
Hayes Siding; 225 feet southwest of Miller Creek wagon-road crossing; wire nail in root of 30-inch pine	3,135.860
Kennedy's ranch, $\frac{1}{2}$ mile north of; 150 feet south of milepost 9, 90 feet west of railroad, west side of wagon road, near fence; iron post, marked "3143 MSLA"	3,143.062

Feet.

Lolo, 65 feet west of station; north side of road near fence, 75 feet west of railroad, 200 feet southwest of milepost 11; iron post, marked "3185 MSLA"	3,185.151
McClain's ranch, 400 feet southeast of; 325 feet west of railroad, east side of wagon road, near fence; iron post, marked "3173 MSLA"	3,172.937
Carlton; 85 feet west of station, south side of county road, near fence; iron post, marked "3199 MSLA"	3,199.202
Florence; 85 feet south of schoolhouse, 300 feet west of railroad, north side of wagon road, near fence; iron post, marked "3271 MSLA"	3,271.161
Bitterroot River; at bridge east of Florence, surface of water	3,195
Stevensville, 2.5 miles north of; 45 feet southwest of Stevensville and Florence wagon road crossing, near fence corner; iron post, marked "3264 MSLA"	3,264.138
Stevensville depot, 100 feet east of; corner of fence, north of road; iron post, marked "3310 MSLA"	3,309.961
Stevensville, 1.5 miles northwest of; Bitterroot River, surface of water	3,267
Stevensville, in wall southeast corner of old court-house building; bronze tablet, marked "3271 N P." (See Appendix to Nineteenth Ann. Rept., p. 361)	3,321.631

STEVENSVILLE TO THREEMILE CREEK, VIA DWYER'S RANCH.

Smith's ranch, 40 feet northwest of; 3½ miles northeast of Stevensville, 1,250 feet east of county road, at mouth of small timbered gulch; iron post, marked "3330 MSLA"	3,329.987
Dwyer's ranch, 15 feet north of yard gate, east of road near fence; iron post, marked "3397 MSLA"	3,397.269
Dwyer's ranch, 3.7 miles northeast of; north side of road; iron post, marked "3912 MSLA"	3,912.208
Cleveland mine, on the divide between the Bitterroot Valley and Rock Creek, near the head of Three-Mile Creek and Welcome Gulch; 300 feet east of; north side of trail; iron post, marked "7182 MSLA." (This was not checked)	7,182.637

DWYER'S RANCH, SOUTHEAST ALONG RIDGE ROAD NORTH OF AMBROSE CREEK TO RICHARD'S RANCH.

Three-Mile schoolhouse, 0.8 mile south of; 100 feet northwest of fork of road, north side of road near fence; iron post, marked "3553 MSLA"	3,553.224
Richard's ranch, 1.4 miles southeast of; southwest bank of timbered ravine, 30 feet south of road; iron post, marked "4653 MSLA"	4,653.143

HAYES SIDLING UP MILLER CREEK ROAD TO HAYES'S SAWMILL.

Williams's ranch, 50 feet south of; 250 feet east of intersection of short road to Missoula with Miller Creek road; iron post, marked "3388 MSLA"	3,388.074
Deberge (or Belgian) ranch, 75 feet southwest of; north side of road near fence; iron post, marked "3764 MSLA"	3,763.887
Davis ranch, 400 feet southwest of; 700 feet west of site of upper setting of Hayes's sawmill, north side of road near fence; iron post, marked "4037 MSLA"	4,036.994

MISSOULA, UP RATTLESNAKE CANYON.

Missoula, 3 miles north of; north and west side of road, at angle in road; iron post, marked "3436 MSLA"	3,436.548
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Feet.

Missoula, 5.5 miles north of; 600 feet west of Effenger's house, 300 feet east of bridge across Rattlesnake Canyon; iron post, marked "3648 MSLA"	3, 648. 410
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BONNER TO POTOMAC VIA BLACKFOOT RIVER.

Bonner, 3 miles east of; 10 feet west of the north end of county bridge over Blackfoot River; iron post, marked "3288 MSLA"	3, 288. 428
Bonner, 6 miles northeast of; 10 feet from north end of old county bridge, 20 feet south of road; iron post, marked "3350 MSLA"	3, 350. 263
Twin Creeks; southeast corner of M. R. Stairs's house, 20 feet north of road; iron post, marked "3411 MSLA"	3, 411. 424
Potomac, 4 miles west of; 15 feet north of road, at gate leading to J. Davis's ranch; iron post, marked "3519 MSLA"	3, 519. 423
Potomac; 100 feet west of post-office; iron post, marked "3619 MSLA"	3, 619. 418

SCEPTER SPUR, UP ROCK CREEK VIA QUIGLEY AND RANCH CREEK.

Gilbert Gulch, mouth of; fork of road running up to Johnson's saw-mill; iron post, marked "3646 MSLA"	3, 645. 424
Quigley; corner of Emmons avenue and Third street; iron post, marked "3834 MSLA"	3, 834. 299
Quigley, 3 miles south of; near mouth of Ranch Creek, northeast corner of Paul's house; iron post, marked "3960 MSLA"	3, 960. 332
Ranch Creek, 2.5 miles southeast of mouth of; 50 feet west of crossing of Ranch Creek by wagon trail, south side of trail; iron post, marked "4189 MSLA"	4, 188. 999
Quigley, 5 miles southwest of; 0.5 mile northeast of mouth of Welcome Gulch, opposite small stream coming in from west, 15 feet south of trail, 75 feet southeast of Rock Creek; iron post, marked "3965 MSLA"	3, 965. 297
Quigley, 8 miles southwest of; 2.5 miles southwest of Welcome Gulch, 50 feet east of Rock Creek, 25 feet above water, west side of trail, in boulder 4 by 3 feet and 2.5 feet high; aluminum tablet, marked "4067 MSLA"	4, 066. 789

WYOMING.

JOHNSON COUNTY.

FORT MCKINNEY QUADRANGLE.

The elevations in the following list are based on a bronze tablet set in the center of the front of the city hall at Sheridan, and marked "SHER 3738." The elevation of this, as published in previous report, is accepted as 3,736.560 feet above mean sea level.

For additional elevations in this locality, see Appendixes to the Nineteenth and Twenty-first Annual Reports of the United States Geological Survey.

The leveling was done in 1899 under the general direction of Mr. Frank Tweedy, topographer, by Mr. E. W. Glafcke, levelman.

All bench marks dependent upon this datum are stamped "SHER" in addition to the figures of elevation.

KEARNEY POST-OFFICE TO BUFFALO, VIA PINEY CREEK, BIG RED
POST-OFFICE, AND CLEAR CREEK.

	Feet.
Sturgis ranch, 750 feet southwest of; 500 feet west of lane entering ranch, 5 feet south of road, on side hill 0.2 mile south of Piney Creek, in large boulder in place; bronze tablet, marked "4521 SHER".....	4,520.529
Flying E ranch, 0.2 mile due south of; 25 feet south of road, in large boulder; bronze tablet, marked "4423 SHER".....	4,422.671
M. A. Hamilton's ranch, 750 feet northeast of; 100 feet north of Piney Creek, at junction of Murphey Gulch and Piney Creek roads, in boulder; bronze tablet, marked "4308 SHER".....	4,308.093
Sam Dickey ranch, southwest of; corner of stone tool house; bronze tablet, marked "4212 SHER".....	4,211.435
Big Red post-office, $\frac{1}{2}$ mile southwest of; on point of divide between Piney and Clear creeks, at junction of Buffalo and Piney roads; bronze tablet, marked "4142 SHER".....	4,141.093
Copp's ranch, southwest corner of; 60 feet southwest of Hopkins stage station, in rock in ground 20 feet south of gate; bronze tablet, marked "4160 SHER".....	4,158.941
Watt's ranch, 1.2 miles southwest of; 10 feet east of road, in large boulder at base of telegraph pole; bronze tablet, marked "4237 SHER".....	4,235.990
Schoolhouse No. 5, 300 feet west of; 0.2 mile west of Murrey's ranch, 20 feet southeast of road, rock at base of fence corner post; bronze tablet, marked "4279 SHER".....	4,277.440
Conrad's ranch, at south gate post at entrance to same, 10 feet north of gate, 100 feet east of Buffalo stage road; iron post, marked "4395 SHER".....	4,393.551
Buffalo, 6 miles north of; old ranch at forks of road; at corner of fence, 50 feet east of stage road, 300 feet west of clear creek; iron post, marked "4418 SHER".....	4,446.781
Rock Creek, 300 feet northeast of; 30 feet south of stage road on small hill; iron post, marked "4545 SHER".....	4,543.716

SOUTH DAKOTA-WYOMING.

FALL RIVER COUNTY, S. DAK.; CROOK COUNTY, WYO.

EDGEMONT AND HAY CREEK QUADRANGLES.

The elevations in the following list are based on a bronze tablet set in the city hall building at Deadwood in 1897 and marked "4543." The elevation at this point, as determined from the Fremont, Elkhorn and Missouri Valley Railroad Company's bench mark, is 4,543.472 feet. See Appendixes to the Nineteenth and Twenty-first Annual Reports of the United States Geological Survey for additional elevations in this vicinity.

The leveling in the north half of the Edgemont quadrangle was done in 1899 by Mr. John T. Stewart, levelman. The leveling on the south half of the Edgemont quadrangle and on all of the Hay Creek quadrangle was done in 1900 by Mr. C. E. Worthington, levelman, under the general direction of Mr. E. M. Douglas, geographer. All bench marks depending on this datum are stamped "DW" in addition to the figures of elevation.

SOUTH DAKOTA.

MINNEKAHTA TO S. AND G. RANCH, ALONG BURLINGTON AND MISSOURI RIVER
RAILWAY, VIA EDMONT.

	Feet.
Minnekahta, 800 feet northeast of station; 100 feet northeast of switch stand at east end of Y. 50 feet north of track, 5 feet southeast of fence corner post; iron post, marked "4159 DW"	4, 159.163
Arnold ranch, 300 feet northwest of; 50 feet west of railroad, east side of wagon road; iron post, marked "4058 DW"	4, 057.934
Arnold ranch, 3 miles south of; 350 feet north and 300 feet east of railroad trestle No. 6, east bank of creek, 300 feet east of railroad; iron post, marked "3891 DW"	3, 891.014
Chilson section house, 0.4 mile west of; 75 feet south of wagon road crossing; iron post, marked "3795 DW"	3, 795.116
Edgemont, 2.9 miles northeast of; 150 feet south of Red Canyon, 75 feet east of wagon road, 50 feet west of railroad; iron post, marked "3460 DW"	3, 460.051
Edgemont, north end of Burlington and Missouri River Railway hotel park, 50 feet west of main track; iron post, marked "3449 DW"	3, 449.087
Edgemont, 4 miles northwest of; 450 feet southeast of railway pile bridge No. 206, 100 feet southwest of railway track, northeast side of wagon road; iron post, marked "3463 DW"	3, 463.094
Marietta, 80 feet southwest of; track at section house, 25 feet northeast of wagon road; iron post, marked "3486 DW"	3, 486.106
Marietta, 2.7 miles northwest of; 300 feet southeast of trestle No. 213, 100 feet southwest of railroad track, 200 feet north of wagon road; iron post, marked "3544 DW"	3, 544.252
Argentine siding, 175 feet south of water tank, 100 feet southwest of main track, 40 feet northeast of wagon road; iron post, marked "3632 DW"	3, 632.196
Moss Agate Creek, 1.8 miles southwest of junction with Cheyenne River; west bank of creek, 100 feet west of steep bank, 70 feet higher and $\frac{1}{4}$ mile west of creek; iron post, marked "3612 DW"	3, 612.154

EDGEMONT TO HOT SPRINGS, VIA MAITLAND POST-OFFICE AND CASCADE SPRINGS.

Edgemont, 2.1 miles southeast of; at top of bluff, 25 feet south of road; iron post, marked "3671 DW"	3, 671.081
Edgemont, 5.8 miles southeast of; 75 feet southeast of intersection of Edgemont, Ardmore, and Maitland post-office roads; iron post, marked "3578 DW"	3, 578.112
Edgemont, 8.6 miles southeast of; 25 feet north of road, on top of ridge; iron post, marked "3575 DW"	3, 574.982
Edgemont, 10.6 miles southeast of; 0.2 mile east of Plum Creek, 0.3 mile south of Cheyenne River, top of small ridge 25 feet south of road; iron post, marked "3350 DW"	3, 350.075
T. 9 S., R. 4 E., sec. 24, $\frac{1}{4}$ corner south side of; Maitland post-office (Brady's ranch), 200 feet southwest of; iron post, marked "3327 DW"	3, 326.669
Maitland post-office, 2 miles northeast of; top of highest ridge on Maitland and Cascade wagon road, 25 feet north of road; iron post, marked "3521 DW"	3, 521.031
T. 85, R. 4 E., southeast corner of; Coffey Flat schoolhouse, $\frac{1}{4}$ mile northwest of; iron post, marked "3261 DW"	3, 261.015
Cascade Springs, 300 feet west of sanitarium; between wagon road and creek, in sandstone rock 3 feet higher than creek; bronze tablet, marked "3406 DW"	3, 406.013

Feet.

Cascade Springs, 3.4 miles northeast of; west side of canyon, 200 feet east of deserted house, 25 feet north of road; iron post, marked "3835 DW"	3,834.964
Cascade Springs, 5.9 miles northeast of; 3.6 miles southwest of Hot Springs, 25 feet west of road on ridge; iron post, marked "3826 DW"	3,825.923

EDGEMONT; UP COTTONWOOD CREEK 6 MILES, THENCE SOUTHEAST TO PROVO SIDING, THENCE ALONG BURLINGTON AND MISSOURI RIVER RAILWAY TO ARDMORE.

Edgemont, 3 miles southwest of; 75 feet northwest of Cottonwood Creek, east side of railroad track; iron post, marked "3528 DW"	3,528.077
Edgemont, 6 miles southwest of; 800 feet southeast of Cottonwood Creek, about 800 feet north of draw running northwest and emptying into same, about 900 feet north of two high buttes; iron post, marked "3634 DW"	3,633.918
Edgemont, 9.2 miles southwest of; at junction of roads running south and southwest, at top of divide; iron post, marked "3839 DW"	3,838.990
Edgemont, 12 miles southwest of; 2.5 miles west of Provo siding, 10 feet north of abandoned wagon road to Provo, 1 mile south of sheep corral; iron post, marked "3710 DW"	3,710.022
Provo station, 500 feet southeast of; 35 feet northeast of wagon-road crossing; iron post, marked "3708 DW"	3,708.098
Provo siding, 3 miles east of; 50 feet north of Burlington and Missouri River Railway track; iron post, marked "3632 DW"	3,631.959
Provo siding, 6 miles east of; 2 miles northwest of Rumford, 60 feet southwest of railway track; iron post, marked "3532 DW"	3,532.012
Rumford, 0.5 miles southeast of; 75 feet south of southeast end of siding, 65 feet southwest of Burlington and Missouri River Railway track, 300 feet east of wagon road; iron post, marked "3500 DW"	3,499.871
Rumford, 3 miles southeast of; 60 feet east of wagon road, 600 feet south of bridge over wagon road, 650 feet west of Burlington and Missouri River Railway track; iron post, marked "3487 DW"	3,486.851
Rumford, 5.9 miles southeast of; 2 miles north of Ardmore, 25 feet east of wagon road, 500 feet west of railway track; iron post, marked "3527 DW"	3,526.777
Ardmore, 525 feet northwest of station; 80 feet north of road, 125 feet northwest of schoolhouse; iron post, marked "3553 DW"	3,552.813

ARDMORE TO RUMFORD; UP INDIAN CREEK TO COLE'S RANCH, THENCE NORTH AND EAST.

Ardmore, 3.2 miles southwest of; 75 feet northwest of crossroads, 0.5 mile north of State line between South Dakota and Nebraska; iron post, marked "3666 DW"	3,665.839
Ardmore, 7.2 miles west of; $\frac{1}{4}$ corner west side of T. 12 S., R. 3 E., sec. 16, 2,100 feet north of State line; iron post, marked "3672 DW"	3,671.972
Ardmore, 10.7 miles west and 1 mile south of; $\frac{1}{4}$ corner west side of T. 12 S., R. 2 E., sec. 13, 1,000 feet southwest of Simler's ranch; iron post, marked "3679 DW"	3,678.675
Ardmore, 14 miles west of; T. 12 S., R. 2 E., sec. 8, southeast corner of; about 0.7 mile west of Cole's ranch, northeast bank of Alkali Creek; iron post, marked "3756 DW"	3,756.110
Cole's ranch, about 4 miles northwest of; 200 feet east of east prong of Alkali Creek, at west end of low ridge; iron post, marked "3899 DW"	3,898.857
Ardmore, 14 miles west and 5 miles north of; T. 11 S., R. 1 E., sec. 18, southwest corner of; at top of divide between the north and south forks of Camp Creek; iron post, marked "4138 DW"	4,137.961

Feet.

Ardmore, 10 miles west and 4.5 miles north of; T. 11 S., R. 2 E., sec. 14, near southwest corner of; 10 feet north of road; iron post, marked "3909 DW"	3,908.803
Ardmore, 6 miles west and 4.5 miles north of; T. 11 S., R. 3 E., sec. 16, southwest corner of; top of low ridge; iron post, marked "3720 DW"	3,719.591
Ardmore, 4.5 miles north and $3\frac{1}{2}$ miles west of; T. 11 S., R. 3 E., sec. 14, $\frac{1}{4}$ corner south side of; 1,000 feet north and 300 feet east of; top of low ridge; iron post, marked "3673 DW"	3,673.208

RUMFORD TO MAITLAND POST-OFFICE, VIA HAT CREEK.

T. 10 S., R. 4 E., sec. 26, southwest corner of; Bar T ranch, 1 mile southwest of; 100 feet southeast of schoolhouse, 125 feet north of Hat Creek, rock 8 by 12 inches and 6 inches above ground; aluminum tablet, marked "3443 DW"	3,442.641
T. 10 S., R. 4 E., sec. 10, near the middle of; Pine Creek, 200 feet south of; 400 feet west of Hat Creek, 100 feet south of schoolhouse, 20 feet west of wagon road, in a sandstone 15 by 10 inches, 7 inches above ground; aluminum tablet, marked "3383 DW"	3,383.033

WYOMING.

SPEARFISH TO EOTHEN, VIA MILES CITY ROAD, FORKS, AND ALADDIN.

Spearfish, Star & Bullock building; in water table; bronze tablet, marked "3647 DW"	3,647.255
T. 7 S., R. 1 E., sec. 10, southeast corner of; Bond's ranch, 800 feet northeast of; south bank of Redwater Creek, north side of wagon road; iron post, marked "3358 DW"	3,358.166
Forks (Robinson's ranch), at the junction of the old Miles City stage road with the road from Aladdin (coal bank), in a sandstone 6 by 8 inches and 17 inches above ground; aluminum tablet, marked "3398 DW"	3,398.035
Barrett, 2.5 miles east of; 18 feet north of wagon road, from the Forks to Barrett, north bank of Hay Creek, in a sandstone 6 by 5 feet and $2\frac{1}{2}$ feet above ground; aluminum tablet, marked "3531 DW"	3,531.219
Aladdin, 1 mile west of; south edge of road, in a sandstone, 7 by 5 feet and $1\frac{1}{2}$ feet above ground; aluminum tablet, marked "3737 DW"	3,737.439
Aladdin, 4.1 miles northwest of; T. 54 N., R. 61 W., sec. 23, 300 feet south of $\frac{1}{4}$ corner east side of; 300 feet south of white schoolhouse, at fork of road to Aladdin and Eothen, in a sandstone, 3 by 3 feet and 3 feet above ground; aluminum tablet, marked "4046 DW"	4,046.416
T. 54 N., R. 62 W., sec. 20, northeast $\frac{1}{4}$ of; John Mahnken's ranch, 1.2 miles east of; at fork of road, top of divide between Hay Creek and Beaver Creek, a sandstone 12 by 12 inches and 14 inches above ground; aluminum tablet, marked "4697 DW"	4,697.609

EOTHEN TO SPEARFISH, VIA SOUTH FORK OF HAY CREEK, NORTH FORK OF REDWATER CREEK, AND BEULAH.

Eothen, 3.5 miles south-southeast of; T. 53 N., R. 62 W., sec. 2, $\frac{1}{2}$ mile south of $\frac{1}{4}$ corner on north side of; top of divide between the head of Redwater Creek and Hay Creek; iron post, marked "4714 DW"	4,714.286
T. 54 N., R. 62 W., sec. 15, southeast $\frac{1}{4}$ of; Rowser's ranch, about 0.5 mile northeast of house; by wire fence, east of road, on north fork of Redwater Creek; iron post, marked "4132 DW"	4,132.346

Feet.

Farrall post-office, 2.2 miles east of; 8 miles west of Beulah, near corner of fence by wagon road; iron post, marked "3875 DW"	3, 875. 503
Beulah, 4 miles northwest of; T. 53 N., R. 61 W., sec. 22, southeast corner of; Ripley's ranch, 2.5 miles southeast of; 50 feet south of road; iron post, marked "3672 DW"	3, 672. 364
Beulah, 70 feet north of J. Belliveau's grocery store; 250 feet east of Sand Creek; iron post, marked "3508 DW"	3, 508. 242
Driscoll's ranch, 0.9 mile east of; top of low ridge, 4.5 miles east of Beulah, 1 mile east of Crow Creek; iron post, marked "3532 DW"	3, 532. 285

FORKS (ROBINSON'S RANCH) TO MOUTH OF BEAVER CREEK, VIA THREE-V RANCH
AND UP BELLE FOURCHE RIVER.

Forks (Robinson's ranch), 3.5 miles north of, T. 54 N., R. 60 W., sec. 4, near $\frac{1}{4}$ corner, west side of; top of divide between Hay Creek and Belle Fourche River, east side of wagon road; iron post, marked "3618 DW"	3, 618. 204
T. 55 N., R. 61 W., sec. 17, northwest $\frac{1}{4}$ of; Three V cattle ranch, 400 feet north of white barn; west bank of Belle Fourche River, west side of road; iron post, marked "3144 DW"	3, 144. 151
T. 55 N., R. 61 W., sec. 2, Weaver's ranch, $\frac{1}{2}$ mile southeast of; $\frac{1}{4}$ mile west of Belle Fourche River; iron post, marked "3198 DW"	3, 198. 302
Riverdale, 2 miles southeast of; at forks of wagon road, about 1 mile south of Belle Fourche River; iron post, marked "3373 DW"	3, 373. 227
Old Riverdale post-office, 200 feet southeast of house, by wire fence on west bank of Belle Fourche River, 300 feet northeast of wagon road; iron post, marked "3196 DW"	3, 196. 325
Old Riverdale post-office, 4.2 miles north of; south side of old Miles City stage road, top of ridge on east side of Belle Fourche River; iron post, marked "3524 DW"	3, 524. 486
White's ranch, 6 miles south of; 50 feet southeast of old Miles City stage road, north bank of Belle Fourche River; iron post, marked "3412 DW"	3, 412. 267
Old Riverdale post-office, 8.1 miles northwest of; east side of Belle Fourche River, north side of wagon road on timbered ridge, at fork of road; iron post, marked "3393 DW"	3, 393. 421
Old Riverdale post-office, 11.8 miles northwest of; top of high ridge, about $1\frac{1}{2}$ miles north of Belle Fourche River, south side of wagon road; iron post, marked "3627 DW"	3, 627. 368
Plumer's ranch, 10.8 miles north of; south side of wagon road, about $\frac{3}{4}$ mile northwest of Belle Fourche River; iron post, marked "3486 DW"	3, 486. 559
Plumer's ranch, 7.9 miles north of; east side of wagon road, north bank of small creek emptying into Belle Fourche River; iron post, marked "3522 DW"	3, 522. 393
Plumer's ranch, 3.6 miles north of; west side of wagon road, about $\frac{1}{4}$ mile east of Belle Fourche River; iron post, marked "3625 DW"	3, 625. 413
Plumer's ranch, 0.4 mile northwest of; T. 56 N., R. 63 W., sec. 25, near center of; east side of wagon road by wire fence; iron post, marked "3684 DW"	3, 684. 413
Plumer's ranch, 1.1 miles northeast of; east side of wagon road at corner of wire fence, top of low divide; iron post, marked "3833 DW"	3, 833. 472
Driscoll's ranch, 2.5 miles northeast of; south side of wagon road, about 0.2 mile south of Belle Fourche River, a sandstone, 2 by 2 feet and 1 foot above ground; aluminum tablet, marked "3612 DW"	3, 612. 249

MOUTH OF BEAVER CREEK TO NORTH REDWATER CREEK AT ROWSER'S RANCH, VIA
BEAVER CREEK, MAINKEN, TAYLOR, AND MADISON RANCHES.

Feet.

Woodcock's ranch, 600 feet east of house; east side of wagon road, east side of Beaver Creek, a sandstone, 2.5 by 2.5 feet and 1.5 feet above ground; aluminum tablet, marked "3827 DW"	3,827.461
Alva post-office, T. 54 N., R. 63 W., sec. 5: about 900 feet southeast of church; 100 feet east of Lame Johnny Creek, 40 feet southeast of wagon road, in a sandstone, 10 by 10 inches and 18 inches above ground; aluminum tablet, marked "3992 DW"	3,992.286
Alva post-office, T. 54 N., R. 63 W., sec. 24, northeast $\frac{1}{4}$ of; 4.6 miles southeast of; $\frac{1}{4}$ mile southeast of schoolhouse, at the junction of the Beaver Creek road with the road from Eothen, in a sandstone, 12 by 12 inches and 1 inch above ground; aluminum tablet, marked "4253 DW"	4,253.716
Taylor's ranch, 0.2 mile northwest of house; 100 feet north of fork of road, top of divide between Beaver Creek and Lame Johnny Creek, a rock 1 by 1 foot and 2 inches above ground; aluminum tablet, marked "5345 DW"	5,345.250
Rowser's ranch, 4.6 miles west of; 250 feet northeast of house at Madison's ranch, north side of road; iron post, marked "4745 DW"	4,745.251

EOTHEN TO PLUMER'S RANCH, ACROSS HAY, OAK, ALUM, AND PINE CREEKS, VIA
PHILIPS'S RANCH.

T. 55 N., R. 62 W., sec. 34, near the northeast corner of; Kimble's ranch, $\frac{1}{4}$ mile northwest of; 300 feet northeast of white schoolhouse, on Oak Creek, at fork of road; iron post, marked "3864 DW"	3,864.285
T. 55 N., R. 62 W., sec. 17; Jones's ranch, 600 feet northeast of house, west side of wagon road, at corner of wire fence; iron post, marked "3827 DW"	3,827.227
T. 56 N., R. 62 W., sec. 31; Philips's ranch, about $\frac{1}{4}$ mile north of; west side of wagon road; iron post, marked "4203 DW"	4,203.248
Plumer's ranch, 1.1 miles northeast of; east side of wagon road, at corner of wire fence, top of low divide; iron post, marked "3833 DW"	3,833.472

THREE V RANCH TO WHITE'S RANCH ON CROW CREEK, THENCE SOUTH TO BELLE
FOURCHE RIVER.

T. 11 N., R. 1 E., sec. 30, in southwest $\frac{1}{4}$ of (Black Hills meridian); Three V cattle ranch, 2.5 miles north and 1.7 miles east of; north side of wagon road running southeast and northwest; iron post, marked "3178 DW"	3,178.267
T. 56 N., R. 60 W., sec. 16, west part of; Three V cattle ranch, 4 miles north of; 50 feet north of old Miles City stage road; iron post, marked "3269 DW"	3,269.228
Three V cattle ranch, 7.4 miles north of; top of divide between Indian Creek and Crow Creek, near State line; iron post, marked "3496 DW"	3,496.191
T. 57 N., R. 60 W., sec. 7; Three V cattle ranch, 11 miles northwest of; 50 feet north of wire fence at top of ridge; iron post, marked "3419 DW"	3,419.336
White's ranch, about 1 mile northeast of; top of ridge between Crow Creek and east branch of same; iron post, marked "3450 DW"	3,450.268

COLORADO.

WELD, ARAPAHOE, AND BOULDER COUNTIES.

GREELEY, LONGMONT, AND DENVER QUADRANGLES.

The elevations in the following list are based on the elevation of the top of lower pedestal, southeast corner of steps of Colorado State capitol building, at Denver, Colo. The point is marked by the letters U.S.B.M. cut on top of granite block. The elevation is obtained from the Coast and Geodetic Survey transcontinental line of levels and is accepted as 5,279.840 feet, as furnished by letter of July 13, 1901, from that Bureau, correcting these elevations on line Roswell to Denver, which were published in the report of the United States Coast and Geodetic Survey for 1898-99, Appendix No. 8.

The leveling was done in 1897 by Thomas Winsor, levelman in charge, and in 1899, under the general direction of Mr. W. M. Beaman, topographer, by E. W. Glafcke and A. E. Franklin, levelmen.

All bench marks are stamped "DENVER," in addition to figures of elevation.

DENVER.

The first five of these elevations result directly from precise leveling of the Coast and Geodetic Survey, not as published in their report for 1898-99, Appendix, but as corrected by letter of July 13, 1901. The tablets were set by the United States Geological Survey.

	Feet.
State capitol, east front of; on lower pedestal, southeast corner of steps, U.S.B.M. cut on top of granite block	5,279.840
State capitol grounds, southeast corner of; azimuth station near steps, top of stone post; aluminum tablet, marked "5279 DENVER"	5,279.675
State capitol grounds, in steps at northeast corner of; bronze tablet (also used as azimuth mark), marked "5278 DENVER"	5,278.864
Union station, east front of; on north side of main entrance, 2 feet above pavement; bronze tablet, marked "5187 DENVER"	5,188.173
Union station, east front of: cross in floor of main entrance, city datum ..	5,186.145
Denver; South Broadway, southwest of Colorado and Southern Railway track, 4 feet north of electric pole of Denver Tramway Company; iron post, marked "5261 DENVER"	5,262.148
T. 4 S., R. 67 W., sec. 1, Glendale dairy, 500 feet northwest of; 3 feet west of a corner stone, at fence corner on southwest side of Cherry Creek road; iron post, marked "5362 DENVER"	5,363.082

DENVER TO GREELEY, ALONG THE UNION PACIFIC RAILROAD, TO BRIGHTON.

The bench marks on this line were set by the United States Geological Survey, but the line was afterwards run by the Coast and Geodetic Survey, and the elevations are the same as those published in its report for 1898-99, Appendix No. 8.

	Feet.
Hotel Model, 1 mile north of; T. 3 S., R. 67 W., sec. 6; 18 feet northwest of track, on south side of highway; iron post, marked "5135 DENVER".....	5, 135.06
Hazeltine, 1.2 miles southwest of; T. 2 S., R. 67 W., sec. 16; 41 feet northwest of track, on north side of highway, 200 yards north of mile board 10; iron post, marked "5094 DENVER".....	5, 094.493
Henderson, $\frac{1}{2}$ mile northwest of; T. 1 S., R. 67 W., sec. 35; 196 feet northwest of main track and on north side of highway; iron post, marked "5037 DENVER".....	5, 037.46
Schoolhouse No. 10, Arapahoe County, about $\frac{1}{2}$ mile west of; T. 1 S., R. 67 W., sec. 13; 23 feet west of track, on north side of highway, 22 miles south of Greeley; iron post, marked "5009 DENVER".....	5, 009.401
Brighton, about 1 mile north of; 24 feet west of track, on south side of the highway known as the "Base Line Road;" iron post, marked "4969 DENVER".....	4, 969.313
Bryan's ranch, 200 yards west of; T. 1 N., R. 66 W., sec. 17; 40 feet west of track, on north side of public highway; iron post, marked "4939 DENVER".....	4, 939.318
Fort Lupton school grounds, northeast corner of; T. 1 N., R. 66 W., sec. 5; 190 feet west of track; iron post, marked "4907 DENVER".....	4, 907.294
Knowlton's ranch, $\frac{1}{2}$ mile east of; T. 2 N., R. 66 W., sec. 20; 26 feet west of track, on south side of public highway; iron post, marked "4872 DENVER".....	4, 872.243
Cheese's ranch, $\frac{1}{2}$ mile west of; T. 2 N., R. 66 W., sec. 6; 31 feet west of track, on south side of public highway, about 300 feet east of main road between Platteville and Fort Lupton, 60 feet south of mile board 32; iron post, marked "4840 DENVER".....	4, 840.185
Platteville, $\frac{1}{2}$ mile south of; T. 3 N., R. 66 W., sec. 19; 30 feet west of track; iron post, marked "4822 DENVER".....	4, 822.197
Moehrl's ranch, $\frac{1}{2}$ mile south of; T. 3 N., R. 66 W., sec. 6; 36 feet west of track, on north side of public highway, about 2.2 miles north of Platteville; iron post, marked "4798 DENVER".....	4, 798.182
Lucerne's ranch, $\frac{1}{2}$ mile northeast of; T. 4 N., R. 66 W., sec. 23; about $\frac{1}{2}$ mile east of northwest corner of; 20 feet west of track, on south side of public highway; iron post, marked "4727 DENVER".....	4, 727.233
La Salle, Colo., $\frac{3}{4}$ mile north of; T. 5 N., R. 65 W., sec. 32; 60 feet west of track and about 200 feet south of old Pikes Peak road; iron post, marked "4653 DENVER".....	4, 653.223
Greeley, 9 feet north of south line of Tenth street; 17 feet west of most westerly track and 12 feet south of warning sign post; iron post, marked "4654 DENVER".....	4, 654.193

DENVER TO WATKINS, ALONG KANSAS PACIFIC RAILROAD, VIA MAGNOLIA.

These bench marks were set by the Geological Survey, but excepting the second one they have all been touched upon by precise levels of the Coast Survey, and the elevations given herewith are the same as published in the Coast Survey Report for 1898-99, Appendix No. 8.

Denver, 6.4 miles east of; 0.2 mile south of Sand Creek slaughterhouse, 14 feet south of main track; iron post, marked "5278 DENVER".....	5, 279.328
T. 2 S., R. 67 W., sec. 33; 41 feet northwest of the southeast corner thereof, and 1.7 miles east of the intersection of the south line of said township with the Burlington and Missouri River Railroad track; iron post, marked "5185 DENVER".....	5, 186.197

Feet.

Magnolia, $\frac{1}{4}$ mile east of; T. 3 S., R. 67 W., sec. 25; 40 feet north of track; iron post, marked "5336 DENVER"	5,337.276
Grippen's ranch, $\frac{1}{4}$ mile south of; T. 3 S., R. 66 W.; 100 feet north of track; iron post, marked "5403 DENVER"	5,404.183
Behren's ranch, 1.1 miles southeast of; T. 3 N., R. 66 W., sec. 36; 50 feet south of track, 60 feet east of bridge No. 803; iron post, marked "5487 DENVER"	5,488.315
Watkins, $\frac{1}{4}$ mile east of; T. 3 S., R. 65 W., sec. 36; 180 feet north of track; iron post, marked "5516 DENVER"	5,517.114

WATKINS NORTH TO GREELEY.

T. 2 S., R. 65 W., sec. 36, 9 feet north and 3 feet east of corner; iron post, marked "5402 DENVER"	5,403.053
Creutz's ranch, $\frac{1}{2}$ mile north of; T. 2 S., R. 64 W., sec. 30, at northwest corner of; 42 feet southeast of intersection of forks of roads; iron post, marked "5282 DENVER"	5,283.1
Wellenkotter's ranch, 1.3 miles northwest of; T. 1 S., R. 65 W., sec. 36; 27 feet north of southwest corner of; iron post, marked "5209 DENVER"	5,209.917
Mooney's ranch, 200 yards north of; T. 1 N., R. 65 W., sec. 35, at corner south side of; 27 feet north of forks of roads; iron post, marked "5101 DENVER"	5,101.65
T. 2 N., R. 65 W., sec. 36; 53 feet northwest of Burlington and Missouri River Railroad track, 106 feet southwest of face of westerly abutment of railroad bridge across Boxelder Creek, about 2.6 miles northeast of Hudson station; iron post, marked "4921 DENVER"	4,921.776
Box Elder Creek, about 200 yards west of; 200 yards south of Oster's ranch, 36 feet southwest of intersecting crossroads; iron post, marked "4854 DENVER"	4,854.550
School No. 41, Weld County, $\frac{3}{4}$ mile south of; T. 3 N., R. 65 W., sec. 36; 36 feet west of east range line; iron post, marked "4820 DENVER"	4,820.656
T. 3 N., R. 64 W., sec. 18, southeast corner of; 44 feet southwest of an old well, 3 feet east of fence corner; iron post, marked "4810 DENVER"	4,810.518
T. 3 N., R. 65 W., sec. 1, northwest corner of; 14 feet south and 3 feet east of fence; iron post, marked "4820 DENVER"	4,820.48
Schoolhouse No. 5, 330 feet east of; T. 4 N., R. 65 W., sec. 14; 50 feet north of crossroads at southwest corner of; iron post, marked "4696 DENVER"	4,696.425
Luper's ranch, $\frac{1}{2}$ mile north of; T. 5 N., R. 65 W., sec. 28; 38 feet northwest of fork of roads at southeast corner of; iron post, marked "4659 DENVER"	4,659.337

DENVER TO ERIE, ALONG BURLINGTON AND MISSOURI RIVER RAILROAD.

Denver, $3\frac{1}{2}$ miles north of; 200 yards southeast of Utah Junction, T. 3 S., R. 68 W., sec. 15; 64 feet west of track; iron post, marked "5222 DENVER"	5,223.133
Harris, $\frac{1}{4}$ mile south of; T. 3 S., R. 68 W., sec. 6; 38 feet southwest of Union Pacific, Denver and Gulf Railroad track; iron post, marked "5296 DENVER"	5,297.111
Semper, about $\frac{1}{4}$ mile north of; 22 feet east of Union Pacific, Denver and Gulf Railroad track, about 350 feet west of Semper schoolhouse and on north side of public highway; iron post, marked "5441 DENVER"	5,442.047

Feet.

Churches, T. 2 S., R. 69 W., sec. 11; 31 feet southeast of Union Pacific, Denver and Gulf Railroad track, on east side of public highway; iron post, marked "5334 DENVER"	5,335.086
Burns Junction, $\frac{1}{2}$ mile northwest of; T. 1 S., R. 69 W., sec. 34; 82 feet northeast of main track, on north side of public highway; iron post, marked "5416 DENVER"	5,417.1
Clarkston, T. 1 S., R. 69 W., sec. 23; 32 feet east of main track, on north side of public highway, about 700 feet east of the northeast corner thereof; iron post, marked "5217 DENVER"	5,218.029
Lafayette station, about $\frac{1}{4}$ mile north of; T. 1 N., R. 69 W., sec. 35; 20 feet east of track, on north side of public highway known as "Base Line road;" iron post, marked "5177 DENVER"	5,178.072
Mitchell, $\frac{1}{2}$ mile south of; T. 1 N., R. 68 W., sec. 30; 36 feet east of track, 6 feet north of a telegraph pole near the edge of a wagon road; iron post, marked "5087 DENVER"	5,087.98

ERIE TO BRIGHTON, VIA UNION PACIFIC RAILROAD.

Erie, 1 mile northeast of; T. 1 N., R. 68 W., sec. 7; 35 feet north of Union Pacific Railroad track, opposite to point where a wagon road leads southeast to Boulder Valley coal mine; iron post, marked "5076 DENVER"	5,076.922
St. Vrains, 800 feet west of; 35 feet northeast of intersection of Union Pacific Railroad with wagon road; iron post, marked "5119 DENVER"	5,119.971
Dick, about 850 feet west of; 42 feet northeast of intersection of Union Pacific Railroad with wagon road; iron post, marked "5130 DENVER"	5,130.829
Dry Creek, about 1 mile east of; 53 feet south of Union Pacific Railroad, near wagon road; iron post, marked "5046 DENVER"	5,045.809

ERIE NORTH TO WINDSOR, VIA PUBLIC ROADS.

White House coal mine, 1 mile south of; T. 2 N., R. 68 W., sec. 33, 4 feet north of southeast corner of; 30 feet north of forks of roads; iron post, marked "5015 DENVER"	5,015.920
Rinn post-office, $\frac{1}{2}$ mile south of; T. 2 N., R. 68 W., sec. 15, at southeast corner of; 45 feet northeast of crossroads; iron post, marked "4882 DENVER"	4,882.874
Ely coal mine, about $\frac{3}{4}$ mile northwest of; T. 2 N., R. 67 W., sec. 18, at southwest corner of; 60 feet east of fence corner; iron post, marked "4913 DENVER"	4,913.871
Scott's ranch, about 100 yards south of; T. 2 N., R. 67 W., sec. 6, at northwest corner of; 45 feet southeast of intersection of crossroads; iron post, marked "4814 DENVER"	4,814.856
School No. 28, Weld County, 125 feet east of; T. 3 N., R. 67 W., sec. 19, at northeast corner; 30 feet southeast of forks of road; iron post, marked "4881 DENVER"	4,881.839
Archer's ranch, 1 mile southeast of; T. 3 N., R. 68 W., sec. 10, at southeast corner of; 44 feet northwest of intersection of crossroads; iron post, marked "4949 DENVER"	4,949.821
Woodley's ranch, about $\frac{1}{4}$ mile north of; T. 3 N., R. 68 W., sec. 3, at northeast corner of; 44 feet southeast of intersection of crossroads; iron post, marked "5086 DENVER"	5,086.764

Feet.

Hill's Lake, 1 mile south of; T. 3 N., R. 67 W., sec. 6, at northeast corner of; 45 feet southeast of intersection of crossroads; iron post, marked "4929 DENVER"	4,929.656
Davis's ranch, 200 feet east of; T. 4 N., R. 67 W., sec. 19, at northeast corner of; 50 feet southeast of intersection of crossroads; iron post, marked "4835 DENVER"	4,835.725
Sunnyside schoolhouse, district No. 36, Weld County, 1 mile south of; T. 4 N., R. 68 W., sec. 22, at northwest corner of; 45 feet southeast of intersection of crossroads; iron post, marked "4904 DENVER"	4,904.609
Twin Mound schoolhouse, district No. 38, Weld County, $\frac{1}{2}$ mile west of; T. 4 N., R. 68 W., sec. 3, at northwest corner of; 35 feet southwest of forks of road; iron post, marked "5101 DENVER"	5,101.531
Dilley Chapel, $\frac{3}{4}$ mile north of; T. 4 N., R. 67 W., sec. 6, at northeast corner of; 45 feet southeast of forks of road; iron post, marked "4887 DENVER"	4,887.593
Dell's ranch, $\frac{3}{4}$ mile south of; T. 5 N., R. 67 W., sec. 19, at northwest corner of; 45 feet southeast of intersection of forks of road; iron post, marked "4878 DENVER"	4,878.542
Spear's ranch, 200 feet west of; T. 5 N., R. 68 W., sec. 10, at southeast corner of; on northeast side of public highway, 30 feet west of fence corner; iron post, marked "4947 DENVER"	4,947.574
Boyd Lake, $1\frac{1}{2}$ miles north of; T. 5 N., R. 68 W., sec. 3; 30 feet south of fence corner; iron post, marked "5015 DENVER"	5,015.538
Schoolhouse No. 22, Weld County, 1 mile north of; T. 5 N., R. 67 W., sec. 5, at northeast corner of; 106 feet southeast of stone; iron post, marked "4921 DENVER"	4,921.475
New Windsor, 500 feet east of; T. 6 N., R. 67 W.; 35 feet southwest of Colorado and Southern Railroad main track, on north side of public highway; iron post, marked "4795 DENVER"	4,795.502

WINDSOR TO GREELEY.

Rawlinson's ranch, $\frac{1}{4}$ mile west of; T. 6 N., R. 67 W., sec. 25; 27 feet south of Colorado and Southern Railway track, on east side of public highway; iron post, marked "4748 DENVER"	4,748.464
Farmer's spur, 500 feet west of; T. 6 N., R. 66 W., 46 feet southwest of Colorado and Southern Railway main track, on south side of public highway; iron post, marked "4712 DENVER"	4,712.463
Boyd's spur, 500 feet southeast of; T. 6 N., R. 66 W., sec. 35, at southeast corner of; 100 feet northwest of intersection of crossroads about 250 feet south of Union Pacific, Denver and Gulf Railroad; iron post, marked "4672 DENVER"	4,672.515
Greeley, Weld County court-house, east front of; on north side of main entrance, on stone coping; bronze tablet, marked "4661 DENVER"	4,661.449

FARMER'S, SOUTH AND EAST TO UNION PACIFIC RAILROAD.

Haymaker's ranch, $\frac{1}{2}$ mile north of; T. 5 N., R. 66 W., sec. 3, 5 feet west of fence corner at forks of road; iron post, marked "4836 DENVER"	4,836.439
Schoolhouse, district No. 24, Weld County, 150 feet north of; T. 5 N., R. 66 W., sec. 21, at $\frac{1}{4}$ corner south side of; 50 feet northwest of intersection of crossroads; iron post, marked "4830 DENVER"	4,830.398
Dunbar's ranch, $\frac{1}{4}$ mile south of; T. 4 N., R. 66 W., sec. 2; 30 feet north of forks of road; iron post, marked "4675 DENVER"	4,675.476

GREELEY TO GREELEY VIA LUCERNE AND KERSEY.

	Feet.
T. 6 N., R. 65 W., sec. 29, $\frac{1}{4}$ corner of west side of; 200 feet southwest of Henry's ranch house; iron post, marked "4718 DENVER"	4,718.004
Lucerne, stone foundation of west wall of brick church, T. 6 N., R. 65 W. of 6th P. M., sec. 17, in southwest corner of, 150 feet due east of crossroads; aluminum tablet, marked "4749 DENVER." (Elevation by United States Coast and Geodetic Survey)	4,748.512
T. 6 N., R. 65 W., sec. 13, southwest corner of; at base of northeast fence post, 150 feet south of Hilton's ranch house; iron post, marked "4700 DENVER"	4,700.303
T. 6 N., R. 64 W., sec. 16, southwest corner of; wooden peg in ground ..	4,781.79
T. 6 N., R. 64 W., sec. 20, northeast corner of; 7 miles east of Lucerne; iron post, marked "4784 DENVER"	4,784.268
T. 5 N., R. 64 W., sec. 5, $\frac{1}{4}$ corner east side of; at base of southwest fence post; iron post, marked "4628 DENVER"	4,627.705
Kersey, $\frac{1}{2}$ mile north of; T. 5 N., R. 64 W., sec. 17, southeast corner of; at base of northwest fence post; iron post, marked "4616 DENVER" ..	4,615.798
Greeley, $2\frac{3}{4}$ miles east of; $\frac{3}{4}$ mile east of cemetery, 25 feet north of road to Kersey; iron post, marked "4643 DENVER"	4,643.115

KERSEY TO BENCH MARK IN SEC. 13, T. 3 N., R. 65 W.

Kersey, on first flat 7 miles south of; 5 miles north of J. P. Klug's ranch, in T. 4 N., R. 64 W., 8 feet west of road; iron post, marked "4642 DENVER"	4,641.760
J. P. Klug's ranch, T. 4 N., R. 64 W.; 25 feet north of fence west of road, on big flat; iron post, marked "4682 DENVER"	4,681.922
J. P. Klug's house, southeast corner of fence around; T. 3 N., R. 64 W., sec. 10., northwest corner of; iron post, marked "4730 DENVER" ...	4,729.787
Klug ranch, 4 miles south of; north side of fence, 4 feet east of gate; iron post, marked "4906 DENVER"	4,006.673
Herman Lewis's ranch house, $\frac{1}{4}$ mile north of; north edge of T. 2 N., R. 64 W., at fork of roads; iron post, marked "4880 DENVER"	4,879.893

BOXELDER CREEK TO T. 1 N., R. 64 W., SIXTH PRINCIPAL MERIDIAN.

Bench mark 150 feet southwest of Boxelder Creek, 2.4 miles east of; 92 feet north of Burlington and Missouri River Railroad, at northeast corner of right-of-way fence; iron post, marked "4984 DENVER" ...	4,984.792
Early ranch, $\frac{3}{4}$ mile southeast of; just north of fence running west and 450 feet west of the southeast corner of fence around pasture; iron post, marked "4978 DENVER"	4,979.044
Early ranch, 3 miles southeast of; on northeast slope of divide, 300 yards southeast of gulch, on same drainage as above ranch; iron post, marked "5083 DENVER"	5,083.585

NEW WINDSOR TO SPEAR'S RANCH, 5 MILES EAST OF LOVELAND.

Cache la Poudre Creek, 250 yards east of bridge over; T. 6 N., R. 68 W., on north side of road from New Windsor to Loveland; iron post, marked "4800 DENVER"	4,800.052
Fossil Creek, 200 yards south of; T. 6 N., R. 68 W., sec. 17, 150 yards south and 30 feet west of $\frac{1}{4}$ corner east side of; 25 feet south of an irrigation ditch, on west side of road; iron post, marked "4860 DENVER"	4,859.722
Bensons Lake, $\frac{1}{2}$ mile northwest of; T. 6 N., R. 69 W., sec. 14; 100 yards south of C. S. Bates's farmhouse, on west side of road, between Loveland and Fort Collins; iron post, marked "5040 DENVER"	5,040.136

Feet.

T. 6 N., R. 69 W., sec. 32, 10 feet south of northerly line of; $\frac{1}{4}$ mile west of Proctor schoolhouse, 20 feet east from center of Colorado and Southern Railroad tracks, south side of highway; iron post, marked "5057 DENVER"	5,057.049
Loveland, 2 miles north of; T. 5 N., R. 69 W., sec. 2, 10 feet north of south line of; 40 feet east of center of Colorado and Southern Railroad tracks, north side of road crossing; iron post, marked "5022 DENVER"	5,021.987

LOVELAND, VIA COLORADO AND SOUTHERN RAILROAD, TO LONGMONT.

Loveland; about 300 feet east of Colorado and Southern Railroad station, in T. 5 N., R. 69 W.; northwest corner of U. P. Church at southwest corner of C and Main streets; bronze tablet, marked "4983 DENVER"	4,982.942
Loveland, 2 miles south of; in T. 5 N., R. 69 W., at road crossing, 20 feet east of center of tracks, north side of highway; iron post, marked "5050 DENVER"	5,050.267
Munson's farmhouse, 150 feet southeast of; in T. 4 N., R. 69 W., sec. 11, $1\frac{1}{2}$ miles northeast of Berthoud, west side of highway, $\frac{1}{4}$ mile east of railroad; iron post, marked "5082 DENVER"	5,081.976
Berthoud Center, northeast corner of bank building at northwest corner of Mount avenue and Third street, in T. 4 N., R. 69 W., sec. 14; aluminum tablet, marked "5030 DENVER"	5,030.743
Berthoud, 2 miles south of; $\frac{1}{4}$ mile northwest of Frankie's reservoir, at road crossing, 30 feet east of center of tracks, north side of highway; iron post, marked "5060 DENVER"	5,060.053
Longmont, $3\frac{1}{2}$ miles north of; $\frac{1}{4}$ mile north of Garret Clawson's farm, northwest corner, at crossing of highways; iron post, marked "5126 DENVER"	5,125.976
Longmont, 1 mile north of; T. 3 N., R. 69 W., sec. 35, 200 yards north of cemetery, 15 feet west of southwest corner of; iron post, marked "5006 DENVER"	5,006.053
Longmont, in northeast corner of city hall; T. 2 N., R. 69 W., sec. 2; aluminum tablet, marked "4980 DENVER"	4,980.109

LONGMONT, ALONG COLORADO AND SOUTHERN RAILROAD, VIA BOULDER, TO ERIE.

Williamson's farm, 250 yards south of; T. 2 N., R. 69 W., sec. 20, northeast corner of road crossing, cattle guard 15 feet east of center of tracks; iron post, marked "5034 DENVER"	5,034.783
Niwot station, 150 feet west of; southwest of highway, 200 yards east of Niwot Hall; iron post, marked "5096 DENVER"	5,096.152
Haystack Mountain, $\frac{1}{2}$ mile south of; T. 2 N., R. 70 W., sec. 33, 30 feet southwest of northeast corner of, at southwest corner of roads; iron post, marked "5242 DENVER"	5,242.087
Beasley's reservoir, $\frac{3}{4}$ mile southwest of; T. 1 N., R. 70 W., sec. 9, west side of highway, in front of Josina's farmhouse; iron post, marked "5236 DENVER"	5,236.322
Boulder, at corner west of front steps of court-house; T. 1 N., R. 70 W., sec. 30; aluminum tablet, marked "5350 DENVER"	5,350.938
Lewis's farm, $\frac{1}{2}$ mile west of; T. 1 N., R. 69 W., sec. 19, at right angle in highway, north side, at fence; iron post, marked "5103 DENVER"	5,103.328
Canfield station, 100 yards west of; 100 feet north of Union Pacific Railroad tracks, at fence corner; iron post, marked "5047 DENVER"	5047.253

Feet.

Erie, northeast corner of Wells and Pierce streets; southwest front corner of Richards's brick block; aluminum tablet, marked "5018 DENVER" 5,018.504

SAN JUAN AND LA PLATA COUNTIES.

FLORIDA, WEMINUCHE, SAN CRISTOVAL, AND SILVERTON QUADRANGLES.

The elevations in the following list are based on a bronze tablet, marked "6517," set in the foundation of the Smelter City State Bank building, at Durango. The elevation of this datum, as derived from the corrected Denver and Rio Grande Railroad levels, is 6,517.003 feet.

For additional elevations in this vicinity see Appendices to the Eighteenth, Nineteenth, and Twentieth Annual Reports of the United States Geological Survey.

The leveling was done in 1899 by Mr. Thomas Winsor and in 1900 by Mr. John P. Darling, under the general direction of Mr. W. M. Beaman, topographer.

All bench marks depending on this datum are stamped with the letters "DUR" in addition to the figures of elevation.

SCHOOLHOUSE, DISTRICT NO. 14, ON FLORIDA RIVER, VIA SPRING GULCH TO COLUMBUS.

	Feet.
Schoolhouse, district No. 14, 1.3 miles southwest of; on east side of road, 35 feet north of bridge over head race, $\frac{1}{4}$ mile northeast of shingle mill; iron post, marked "7325 DUR"	7,324.892
Stark's sawmill, 1 mile southwest of; on southeast side of road, 10 feet west of gate at entrance to lane leading to Eschoven's residence 300 feet distant; iron post, marked "7547 DUR"	7,547.131
Stark's sawmill, 1.5 miles northeast of; 5 feet south of fence corner at forks of road, 100 feet east of bridge over Florida River; iron post, marked "7770 DUR"	7,769.813
Columbus post-office, 500 feet west of; at forks of road; iron post, marked "7321 DUR"	7,320.512

COLUMBUS TO SILVERTON, VIA PINE RIVER, WEMINUCHE PASS, RIO GRANDE, STONY PASS, AND HOWARDSVILLE.

Columbus post-office, 3 miles northeast of; near angle in rail fence on east side of road, 200 feet north of bridge over drain; iron post, marked "7496 DUR"	7,495.553
Columbus post-office, 6.5 miles north of; by a wire fence on southeast side of road, at junction with road running up Vallecito Creek; iron post, marked "7617 DUR"	7,616.657
Graham's ranch, $\frac{1}{2}$ mile southwest of; on north side of road, 17 feet west of bridge over Pine River near beginning of trail leading up river, in top of boulder; aluminum tablet, marked "7747 DUR"	7,746.463
Graham's ranch, 3 miles north of; by a wire fence, 10 feet east of gate through which trail passes, in top of granite boulder; bronze tablet, marked "7873 DUR"	7,872.108
Graham's ranch, 6 miles northeast of; 30 feet north of trail, about $\frac{1}{4}$ mile northeast of Pine River crossing, in top of flat triangular-shaped boulder; bronze tablet, marked "7985 DUR"	7,984.395

Feet.

Graham's ranch, 8.5 miles northeast of; 17 feet northwest of forks at junction with trail running northwest of Emerald Lakes, $\frac{1}{2}$ mile northeast of Lake Fork, in top of granite boulder; aluminum tablet, marked "8185 DUR"	8, 184. 534
Graham's ranch, 12 miles northeast of; southeast of trail, in front of 8-inch spruce tree, about 400 feet west of a high waterfall on side of mountain, in top of pink granite boulder; bronze tablet, marked "8701 DUR"	8, 699. 627
Weminuche Pass, 10.3 miles southwest of; on east side of trail, near summit of steep ascent on south side of Flint Fork Canyon, in top of large granite boulder; bronze tablet, marked "9334 DUR"	9, 322. 775
Weminuche Pass, 7.3 miles southwest of; southeast of trail near clump of spruce trees, about 100 feet northeast of small mountain stream, in top of granite boulder; bronze tablet, marked "9904 DUR"	9, 902. 835
Weminuche Pass, 4 miles southwest of; on east side of and nearly level with trail, in top of granite boulder; bronze tablet, marked "10051 DUR"	10, 050. 139
Weminuche Pass, 9 feet east of trail, 150 feet south of summit of Continental Divide, in top of sandstone boulder; aluminum tablet, marked "10623 DUR"	10, 621. 926
Weminuche Pass, 1 $\frac{3}{4}$ miles northeast of; 10 feet northeast of small creek, 60 feet southwest of blazed twin spruce tree on southeast side of trail, in triangular-shaped boulder; aluminum tablet, marked "10337 DUR"	10, 336. 128
Point Burwell, 3.3 miles southeast of; at base of steep slope, 75 feet north of road at point where Rio Grande makes a sweeping bend, on bench of rocky ledge; aluminum tablet, marked "9386 DUR"	9, 384. 439
Point Burwell, $\frac{3}{10}$ mile northwest of; 25 feet southwest of road, about 50 feet southeast of an old log cabin in cow pasture, in top of large rock; aluminum tablet, marked "9488 DUR"	9, 486. 360
Point Burwell, 3 miles northwest of; 8 feet south of and nearly level with road on side hill, in top of sandstone rock; aluminum tablet, marked "9918 DUR"	9, 916. 315
Timber Hill, 1.5 miles east of; 45 feet north of road near cow camp at base of hill, 2 feet above ground, in southwest face of large wedge-shaped rock 12 feet high; aluminum tablet, marked "9991 DUR"	9, 898. 251
Timber Hill, 1.7 miles northwest of; on edge of rocky mound, east side of road, 120 feet north of Pole Creek, in top of boulder; aluminum tablet, marked "10488 DUR"	10, 486. 010
Stony Pass, 2.5 miles southeast of; on north side of road, 50 feet east of trail, 170 feet east of sharp bend in road, in top of boulder; bronze tablet, marked "11473 DUR"	11, 471. 141
Stony Pass, summit of; 15 feet northeast of road, in top of flat rock; aluminum tablet, marked "12594 DUR"	12, 591. 857
Howardsville, 1.7 miles southeast of; on south side of road, 150 feet east of junction with road running south up Cunningham Gulch, in top of large rock; bronze tablet, marked "10096 DUR"	10, 094. 261
Howardsville, 400 feet south of post-office; on south side of road at forks, 100 feet south of bridge over Cunningham Creek, in top of boulder; aluminum tablet, marked "9670 DUR"	9, 668. 057
Silverton, 2.3 miles northeast of; on south side of public road, 15 feet north of track, 120 feet east of road crossing, about 400 feet northeast of E. G. Stoiler's residence, on top of quartz boulder; aluminum tablet, marked "9431 DUR"	9, 428. 854

Feet.

Silverton; in southeast corner of Grand Hotel block, 2.5 feet above sidewalk at northwest corner of Greene and Twelfth streets; aluminum tablet, marked "9302 DUR"	9,299.686
Silverton; at northwest corner of section house on opposite side of track from Denver and Rio Grande Railroad station; iron post, marked "9270 DUR"	9,267.917
JUNCTION OF PINE RIVER AND VALLECITO CREEK, 6.5 MILES NORTHEAST OF COLUMBUS POST-OFFICE, VIA VALLECITO CREEK, TO JUNCTION OF POLE CREEK AND RIO GRANDE.	
Old fish hatchery, 0.7 mile south of; 250 feet south of small creek, in granite boulder; aluminum tablet, marked "7720 DUR"	7,719.002
Fish hatchery, 2 miles north of; 100 feet south of branch of Vallecito Creek, at foot of large pine tree on west edge of trail, in flat rock; aluminum tablet, marked "7926 DUR"	7,926.120
Quartz mill, 0.5 mile north of; 90 feet north of prospect dump on trail and 150 feet south of junction of two branches of Vallecito Creek, in top of point of rock jutting into creek; aluminum tablet, marked "8426 DUR"	8,425.330
Quartz mill, 3.7 miles northeast of; 300 feet south of creek crossing, foot of hill on west side of creek, 3 feet left of trail, in boulder; aluminum tablet, marked "8869 DUR"	8,868.052
Johnson Creek, 75 feet south of; 250 feet west of its junction with Vallecito Creek, in granite boulder; aluminum tablet, marked "9166 DUR"	9,165.780
Johnson Creek, 3 miles northeast of its junction with Vallecito Creek, 15 feet west of spring branch, 20 feet east of trail at foot of hill; aluminum tablet, marked "9578 DUR"	9,577.487
Johnson Creek, 7.5 miles north of its junction with Vallecito Creek, 5 feet west of trail near forks of creek, in large rock; aluminum tablet, marked "10995 DUR"	10,994.547
Pass, summit of; 125 feet northwest of stone monument, 100 feet from west crest of divide; bronze tablet, marked "12487 DUR"	12,486.706
Bear Town, lower end of; 125 feet southwest of two lower cabins on north side of road, in boulder on rocky point; bronze tablet, marked "11157 DUR"	11,155.936
Johnson and Vallecito creeks, 3.5 miles above junction of; 200 feet south of cabin, in boulder 30 feet from trail; bronze tablet, marked "11077 DUR"	11,076.774

ARIZONA.

MARICOPA, PINAL, GILA, AND GRAHAM COUNTIES.

The elevations in the following list are based on an aluminum tablet marked "1090," set in the north front of the Maricopa County courthouse at Phoenix, Ariz. The elevation of this datum, as determined from the Maricopa, Phoenix and Salt River Valley Railroad, is 1,098.910 feet.

The leveling was done in 1899 and 1900 by Mr. Thomas Winsor, and in 1901 by Mr. John T. Stewart, under the general direction of Mr. E. M. Douglas, geographer.

All bench marks depending on this datum are marked "PHNX" in addition to the figures of elevation.

TEMPE AND FLORENCE QUADRANGLES.

PHOENIX, VIA MARICOPA, PHOENIX AND SALT RIVER VALLEY RAILROAD, TO TEMPE.

	Feet.
Phoenix, Maricopa County court-house, north front of; in projection at northwest corner, 15 feet west of main entrance, 3 feet above ground; aluminum tablet, marked "1090 PHNX"	1,089.910
Phoenix, opposite Santa Fe, Prescott and Phoenix Railroad station, top of rail	1,081.5
Phoenix; on east side of Seventh street, 100 feet southeast of Maricopa, Phoenix and Salt River Valley Railroad station, between two cottonwood trees; iron post, marked "1083 PHNX"	1,082.920
Phoenix, opposite Maricopa, Phoenix and Salt River Valley Railroad station, top of rail	1,082
Phoenix, 4 miles east of; on west side of public road, 16 feet south of track; iron post, marked "1132 PHNX"	1,131.883
Bridge over Salt River, top of rail	1,165
Tempe, opposite station, top of rail	1,159
Tempe, at north end of station, 50 feet east of main track; iron post, marked "1158 PHNX"	1,158.077

TEMPE, ALONG MARICOPA, PHOENIX AND SALT RIVER VALLEY RAILROAD, TO MESA.

Tempe, 2½ miles southeast of; on south side of public road, opposite to road running north; iron post, marked "1177 PHNX"	1,177.063
Mesa station, 1½ miles northwest of; at northeast corner of crossroads, 30 feet north of track; iron post, marked "1235 PHNX"	1,235.109
Mesa, 250 feet southwest of station; near corner of wire fence on east side of public road; iron post, marked "1244 PHNX"	1,244.074

MESA, ALONG FLORENCE ROAD, TO DESERT WELL.

Mesa, 0.5 mile east and 0.5 mile south of; crossroads ½ mile south of mill, ground	1,233
Mesa, 3 miles southeast of; by a wire fence corner at southeast corner of crossroads; iron post, marked "1243 PHNX"	1,243.146
Highland Canal, floor of bridge over	1,253
Mesa, 6¼ miles southeast of; 60 feet south of road on north side of giant cactus about 30 feet high; iron post, marked "1295 PHNX"	1,295.179
Desert Well, 5¼ miles northwest of; 20 feet northeast of road at point where road forks into two wagon tracks; iron post, marked "1351 PHNX"	1,350.917
Desert Well, 2¼ miles northwest of; northeast side of road at bend, 25 feet southeast of small drain; iron post, marked "1407 PHNX"	1,407.092
Desert Well, at northeast corner of fence inclosing Thos. Buchanan's residence; iron post, marked "1446 PHNX"	1,446.035

DESERT WELL ALONG PUBLIC ROADS TO FLORENCE.

Desert Well, 3 miles southeast of; on southwest side of road; iron post, marked "1490 PHNX"	1,489.970
Desert Well, 6 miles southeast of; on northeast side of road; iron post, marked "1592 PHNX"	1,542.047

	Feet.
Desert Well, 9 miles southeast of; on northeast side of road in open place on desert; iron post, marked "1601 PHNX".....	1,601.028
Queen Creek, bed of; at road crossing.....	1,625
Desert Well, 12 miles southeast of; on northeast side of road about $\frac{1}{2}$ mile southeast of Queen Creek; iron post, marked "1631 PHNX".....	1,630.995
Florence, $11\frac{3}{4}$ miles northwest of; on northeast side of road by a mesquite stump near bend; iron post, marked "1631 PHNX".....	1,631.157
Florence, $8\frac{1}{4}$ miles northwest of; 35 feet northwest of crossroad; iron post, marked "1618 PHNX".....	1,618.058
Florence, 6 miles north of; on west side of road: iron post, marked "1595 PHNX".....	1,595.018
Florence, 4 miles north of; in forks of road at junction with road running northeast to Raymert, 7 feet north of guideboard "Gold fields, 26 miles: Florence, 4 miles:" iron post, marked "1619 PHNX".....	1,618.957
Florence, $1\frac{1}{4}$ miles north of; in forks of road at junction with road running northwest; iron post, marked "1479 PHNX".....	1,478.952
Gila River, bed of; at road crossing.....	1,459
Florence, Pinal County court-house, west front of; in southwest corner of west wing, about 3 feet above ground; aluminum tablet, marked "1493 PHNX".....	1,492.835

FLORENCE VIA BLACKWATER CHAPEL, SACATON, AND CASA BLANCA, TO
SACATON STATION.

Florence, $3\frac{1}{4}$ miles southwest of; 50 feet west of forks of roads, about 1,000 feet east of Adamsville ruins; iron post, marked "1441 PHNX".....	1,440.848
Florence, $6\frac{3}{4}$ miles southwest of; on north side of road, 100 feet southeast of adobe ruins; iron post, marked "1421 PHNX".....	1,420.853
Blackwater Chapel, $3\frac{1}{4}$ miles southeast of; on north side of road opposite a division fence near bend in road, 150 feet southeast of adobe ruins; iron post, marked "1397 PHNX".....	1,396.925
Blackwater Chapel, 500 feet northwest of; 75 feet northwest of forks of roads; iron post, marked "1362 PHNX".....	1,361.830
Blackwater Chapel, 3 miles northwest of; 50 feet southeast of junction with road running southeast; iron post, marked "1354 PHNX".....	1,353.886
Sacaton, $3\frac{1}{4}$ miles east of; on northwest side of road near bend, 180 feet west of a new ditch running north and south; iron post, marked "1305 PHNX".....	1,305.007
Sacaton, on north side of gate: east side of Pima Indian Agency grounds; iron post, marked "1274 PHNX".....	1,274.117
Sacaton, 3 miles west of; on south side of road and on east bank of small drain; iron post, marked "1251 PHNX".....	1,250.843
Sacaton, 6 miles west of; on north side of road, west edge of open flat; iron post, marked "1223 PHNX".....	1,222.933
Casa Blanca Chapel, 3 miles northeast of; on south side of road near an Indian village, about $\frac{1}{4}$ mile southeast of a Catholic chapel; iron post, marked "1198 PHNX".....	1,197.894
Casa Blanca; by corner of a wire fence on north side of, and near fork of roads, 350 feet north of a mission chapel; iron post, marked "1181 PHNX".....	1,180.848
Casa Blanca Chapel, 3 miles west of; on north side opposite forks at junction with a road running north; iron post, marked "1163 PHNX".....	1,162.826
Sacaton station, on south side of public road, 25 feet west of Maricopa, Phoenix and Salt River Valley railroad track, 60 feet south of switch head block; iron post, marked "1127 PHNX".....	1,127.111

SACATON STATION ALONG MARICOPA, PHOENIX AND SALT RIVER
VALLEY RAILROAD TO TEMPE.

	Feet.
Sacaton station, bridge over Gila River, top of rail.....	1, 127
Sacaton station, under bridge, Gila River, bed of.....	1, 119
Sacaton station, 3 miles north of; 30 feet west of track, near telegraph pole, 300 feet north of vitrified tile culvert; iron post, marked "1133 PHNX".....	1, 132.975
Kyrene; 4 miles south of; 25 feet west of track, by telegraph pole; iron post, marked "1140 PHNX".....	1, 139.788
Kyrene, 1 mile south of; 25 feet east of track on east side of public road; iron post, marked "1157 PHNX".....	1, 156.889
Kyrene, in front of sign-board, top of rail.....	1, 174
Kyrene, 1½ miles north of; on top of bank 20 feet east of track, 180 feet south of culvert, west side of public road; iron post marked "1198 PHNX".....	1, 197.787
Tempe, 3½ miles south of; 35 feet east of track, near fence, corner of field having small reservoir; iron post, marked "1188 PHNX".....	1, 187.686
Petersen; in front of sign board, top of rail.....	1, 180

FLORENCE ALONG CANAL ROAD TO THE BUTTES.

Florence, 3 miles northeast of; by a wire-fence corner at junction with a dirt road running west on north line of sec. 32, T. 3 S., R. 10 E., 700 feet southwest of adobe ranch house; iron post, marked "1535 PHNX".....	1, 534.853
Junction with road running north, ground opposite to.....	1, 537
Florence, 6 miles northeast of; by a wire-fence corner on northwest side of road, opposite foris; iron post, marked "1531 PHNX".....	1, 530.992
White's ranch, ¼ mile east of; on top of granite ledge on southwest bank of Gila River, 150 feet southeast of canal head gate; aluminum tablet, marked "1574 PHNX".....	1, 573.539
The Buttes gauging station; zero point of gauge rod.....	1, 581.94
The Buttes; in face of cliff, west side of Gila River, 1½ feet above surface on axis of proposed dam; bronze tablet, marked "1592 PHNX".....	1, 592.308

THE BUTTES ALONG ROAD, VIA DONNELLY'S WELL, TO FLORENCE.

Junction with Florence and Riverside road, ground.....	2, 154
Donnelly's Well, 1 mile southwest of; on south side of road, at bend on top of hill; iron post, marked "2281 PHNX".....	2, 281
Donnelly's Well, 1 miles west of; on east side of road near north bank of small wash; iron post, marked "2097 PHNX".....	2, 097.065
Donnelly's Well, 7 miles west of; on south side of road at top of small hill; iron post, marked "1929 PHNX".....	1, 929.118
Florence, 6½ miles east of; 75 feet southeast of junction with road running to Mammoth; iron post, marked "1769 PHNX".....	1, 769.178
Casa Grande Valley Canal, floor of bridge over.....	1, 537

DESERT WELL ALONG MESA AND SILVER KING ROAD TO HEWITT'S
RANCH.

Desert Well, 3 miles east of; 30 feet north of road; iron post, marked "1525 PHNX".....	1, 524.985
Desert Well, 6 miles east of; on north side of road, 150 feet west of small wash; iron post, marked "1609 PHNX".....	1, 609.033
Desert Well, 9 miles east of; on north side of road at bend, 35 feet southeast of small wash; iron post, marked "1710 PHNX".....	1, 710.203
Whitlow's ranch, 8½ miles west of; on north side of road; iron post, marked "1832 PHNX".....	1, 831.918

Feet.

Whitlow's ranch, $5\frac{1}{4}$ miles west of; on south side of road, standing 2 feet above surface of ground, surrounded by mound of boulders and earth; iron post, marked "1923 PHNX"	1, 923. 133
Whitlow's ranch, $2\frac{3}{4}$ miles west of; in top of sandstone ledge on north; west side of road, at base of rocky hill, 40 feet northwest of Queen Creek; aluminum tablet, marked "1962 PHNX"	1, 962. 432
Queen Creek gaging station, zero of gage rod	2, 042. 34
Whitlow's ranch, 1,000 feet east of; on sloping ledge 13 feet south of south edge of Queen Creek bed, on axis of proposed dam; bronze tablet, marked "2056 PHNX"	2, 056. 662

HEWITT'S RANCH, ALONG MESA AND SILVER KING ROAD, TO PINAL.

Hewitt's ranch, 1 mile east of; on east side of road 70 feet northwest of Queen Creek; iron post, marked "2171 PHNX"	2, 171. 082
Pinal, 3 miles west of; on side hill south side of road, 100 feet east of a wash; iron post, marked "2336 PHNX"	2, 336. 297
Pinal; in top of sandstone outcrop 500 feet north of town, on east side of road; aluminum tablet, marked "2529 PHNX"	2, 529. 182

PINAL, VIA SILVER KING, NICHOLAS RANCH, AND REYMERT, TO IRON POST, "FLORENCE, 4 MILES NORTH OF."

Junction with Florence and Silver King road, ground at	2, 775
Silver King, 2 miles southwest of; in top of pink sandstone boulder on east side of road, 170 feet north of wash; aluminum tablet, marked "3023 PHNX"	3, 023. 166
Silver King; on south side of road at summit of steep hill on west edge of town; iron post, marked "3553 PHNX"	3, 553. 024
Silver King, $4\frac{3}{4}$ miles southwest of; northwest side of road, at junction with road running north to Whitford's ranch; iron post, marked "2561 PHNX"	2, 561. 282
Queen Creek, bed of, at road crossing	2, 345
Reymert, 4 miles northeast of; on north side of road near end of brush fence, 75 feet north of house at Nicholas ranch; iron post, marked "2406 PHNX"	2, 405. 957
Reymert, $\frac{3}{4}$ mile northeast of; on northeast side of road, at south end of deep cut on summit of hill; iron post, marked "3160 PHNX"	3, 160. 632
Reymert, $2\frac{1}{4}$ miles southwest of; on southeast side of road at bend; iron post, marked "2321 PHNX"	2, 321. 680
Reymert, $5\frac{1}{4}$ miles southwest of; on northwest side of road at bend, 35 feet north of small wash; iron post, marked "2004 PHNX"	2, 003. 971
Reymert, $8\frac{1}{4}$ miles southwest of; on east side of road, 25 feet southeast of small wash; iron post, marked "1845 PHNX"	1, 845. 055
Florence, 9 miles northeast of; on northwest side of road opposite forks, at junction with road running northeast to Whitlow's ranch; iron post, marked "1725 PHNX"	1, 724. 965
Florence, $6\frac{1}{2}$ miles northeast of; on east side of road at junction with an old wood road; iron post, marked "1646 PHNX"	1, 645. 767

WHITLOW'S RANCH, SOUTHWESTWARD AND THEN NORTHWESTWARD TO AND ALONG BARK'S RANCH ROAD.

Whitlow's ranch, 2 miles southwest of; 50 feet northeast of forks at junction with old Florence and Silver King road; iron post, marked "2062 PHNX"	2, 062. 242
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Feet.

Whitlow's ranch, $5\frac{1}{4}$ miles southwest of; on southeast side of road; iron post, marked "1926 PHNX"	1,926.258
Whitlow's ranch, 8 miles southwest of; on northwest side of road; iron post, marked "1841 PHNX"	1,841.038
Bark's ranch, $2\frac{3}{4}$ miles south of; in forks of road at junction with road running north to Bark's ranch; iron post, marked "2056 PHNX"	2,056.025
Bark's ranch; on north side of road, 80 feet west of house; iron post, marked "2236 PHNX"	2,235.771
Bark's ranch, $6\frac{1}{4}$ miles southwest of; on south side of road at bend, 30 feet east of small wash; iron post, marked "1863 PHNX"	1,862.950

MESA AND SILVER KING ROAD, ALONG FLORENCE AND GOLDFIELD ROAD,
TO GOLDFIELD.

Goldfield, 7 miles south of; on west side of road, at junction with an old wood road running southwest; iron post, marked "1694 PHNX"	1,694.096
Goldfield, 4 miles south of; on east side of road at bend; iron post, marked "1765 PHNX"	1,765.075
Goldfield, 1 mile southwest of; in forks, at junction with Mesa and Goldfield road; iron post, marked "1934 PHNX"	1,934.015

DONNELLY'S WELL, ALONG FLORENCE AND RIVERSIDE ROAD, TO
RIVERSIDE.

Donnelly's well, $3\frac{1}{4}$ miles east of; on northeast side of road at bend where road crosses a wash; iron post, marked "2625 PHNX"	2,624.894
Donnelly's well, $6\frac{1}{4}$ miles east of; at summit of hill, highest point between Florence and Riverside; iron post, marked "3081 PHNX" ..	3,081.115
Riverside; 5 miles southwest of; on southeast side of road at bend on ridge; iron post, marked "2250 PHNX"	2,250.067
Ripsey Wash, bed of	1,847
Riverside, between 2 and 3 miles southwest of; summit of hill, ground at	2,115

PINAL AND GLOBE QUADRANGLES.

Riverside, 2 miles southwest of; on southeast side of road, 200 feet northeast of junction with road running northeast to Piety Flat; iron post, marked "1940 PHNX"	1,940.041
Riverside; in top of embedded boulder at southwest corner of small corral 120 feet northeast of post-office; aluminum tablet, marked "1778 PHNX"	1,777.792

RIVERSIDE TO GLOBE, NORTHWARD ALONG GLOBE AND RIVERSIDE
ROAD.

Riverside, Gila River, bed of; at road crossing	1,759
Riverside, 3 miles northeast of; on southwest side of road, 400 feet west of point where road crosses wash, in top of granite boulder; bronze tablet, marked "2511 PHNX"	2,510.556
Riverside, 6 miles northeast of; on east side of road at summit of hill, opposite to road running southwest to a mine, in top of granite boulder; aluminum tablet, marked "3644 PHNX"	3,643.733
Dripping Spring, 1 mile west of; on southwest side of road, at gate on northwest side of a filled rail fence; iron post, marked "2986 PHNX" ..	2,985.928
Dripping Spring, 2 miles northeast of; in top of hard sandstone boulder 15 feet east of road, 30 feet south of small wash; bronze tablet, marked "2995 PHNX"	2,995.257

Feet.

Pioneer, $3\frac{1}{4}$ miles south of; on northeast side of road at bend, at point where road leaves ridge and ascends steep side hill; iron post, marked "3846 PHNX"	3,845.828
Pioneer; on east side of road, 40 feet southwest of stage station, in top of granite boulder; aluminum tablet, marked "4505 PHNX"	4,504.936
Pioneer, $3\frac{3}{4}$ miles north of; on southeast side of road, at summit of pass over Pinal Mountains; iron post, marked "6158 PHNX"	6,157.812
Globe, $7\frac{1}{2}$ miles south of; on east side of road at bend, in top of large granite boulder; bronze tablet, marked "4962 PHNX"	4,962.322
Globe, 4 miles southeast of; on south side of gate, west side of road, at the "66" ranch; iron post, marked "3825 PHNX"	3,824.968
Globe, $2\frac{1}{2}$ miles southeast of; on southwest side of road, at northeast corner of small corral opposite slaughterhouse; iron post, marked "3637 PHNX"	3,636.824
Globe, Gila County court-house, in west face of; at southwest corner, 2 feet above ground; aluminum tablet, marked "3525 PHNX"	3,524.798

GLOBE, ALONG GILA VALLEY, GLOBE AND NORTHERN RAILWAY, TO SAN CARLOS.

Globe, opposite station at; top of rail	3,509
Globe, $2\frac{1}{2}$ miles southeast of; on top of hill, $\frac{1}{2}$ mile south of railway; meridian mark, tablet marked "3885 PHNX"	3,885.169
Globe, $2\frac{1}{2}$ miles southeast of; by warning post on south side of track at public-road crossing, 600 feet west of summit of hill; iron post, marked "3720 PHNX"	3,719.726
Globe, $5\frac{3}{4}$ miles southeast of; 15 feet southwest of track at southeast end of cut, 75 feet southeast of P. C.; iron post, marked "3402 PHNX"	3,401.777
Cutter switch, east head block of; top of rail	3,257
Gilson's, $3\frac{1}{2}$ miles west of; by telegraph pole on north side of track; iron post, marked "3168 PHNX"	3,167.588
Gilson's, $\frac{1}{4}$ mile west of water tank; by first telegraph pole west of public-road crossing, on north side of track; iron post, marked "3013 PHNX"	3,012.769
Gilson's, $2\frac{1}{4}$ miles southeast of; 10 feet south of track, east side of public-road crossing, 300 feet east of trestle No. 229; iron post, marked "2881 PHNX"	2,896.792
Rice, $2\frac{3}{4}$ miles northwest of; in front of second telegraph pole east of trestle No. 227; iron post, marked "2748 PHNX"	2,747.670
Rice, at northwest corner of crossroads, 180 feet east of switch head block; iron post, marked "2635 PHNX"	2,634.755
Rice, 3 miles south of; 40 feet west of track on north side of wagon road; iron post, marked "2585 PHNX"	2,584.859
San Carlos, $4\frac{1}{2}$ miles north of; 25 feet east of track, on east side of wagon road; iron post, marked "2540 PHNX"	2,539.769
San Carlos, $1\frac{1}{4}$ miles north of; 25 feet southwest of track, at public-road crossing; iron post, marked "2470 PHNX"	2,469.795
San Carlos, opposite station; top of rail	2,431.7
San Carlos; 150 feet northwest of station, 45 feet southwest of main track; iron post, marked "2431 PHNX"	2,430.716

SAN CARLOS, VIA HAWK CANYON, TO WOOTEN'S RANCH.

San Carlos, south of; Gila River, bed of	2,386
San Carlos, 3 miles south of; on east side of road, north side of small wash; iron post, marked "2671 PHNX"	2,670.615

Feet.

San Carlos, 6 miles south of; on southwest side of road on top of hill, 45 feet west of United States Army telegraph pole; iron post, marked "3573 PHNX"	2,572.789
Wooten's ranch, $6\frac{1}{4}$ miles north of; in limestone outcrop, 15 feet west of road, 25 feet northwest of small wash; bronze tablet, marked "3810 PHNX"	3,810.034
Wooten's ranch, $3\frac{1}{4}$ miles north of; in top of 9 by 6 foot rock, 3 feet above surface, 35 feet southwest of wash, near base of tall cliff; aluminum tablet, marked "3454 PHNX"	3,453.541
Wooten's ranch; in top of large rock, 200 feet southwest of cabin, 40 feet northwest of trail, 30 feet west of 38-inch leaning sycamore tree; bronze tablet, marked "3911 PHNX"	3,910.768

WOOTEN'S RANCH, ALONG TRAIL VIA DEER CREEK COAL FIELDS AND
MANNING'S RANCH, TO DUDLEYVILLE.

Wooten's ranch, $3\frac{1}{4}$ miles west of; in top of hard sandstone outcrop 6 feet south of trail, 10 feet northeast of 12-inch blazed pine tree, 150 feet east of point where trail crosses wash; aluminum tablet, marked "4041 PHNX"	4,040.554
Manning's ranch, $2\frac{1}{4}$ miles east of; on north side of trail, 30 feet east of ravine, in top of triangular boulder; aluminum tablet, marked "3538 PHNX"	3,527.386
Manning's ranch, $1\frac{1}{4}$ miles west of; in front of 4-inch paloverde tree, 10 feet southwest of trail, in top of hard flint boulder; aluminum tablet, marked "2998 PHNX"	2,997.729
Manning's ranch, 5 miles west of; 20 feet south of trail, at west edge of gravel mound, in top of limestone boulder; aluminum tablet, marked "2652 PHNX"	2,651.380
Manning's ranch, $7\frac{1}{4}$ miles west of; on north side of trail, southwest bank of Little Rock Creek, on top of kite-shaped boulder; aluminum tablet, marked "2510 PHNX"	2,509.117
Dudleyville, 7 miles east of; on north side of Ash Creek, at mouth of and on east side of canyon through which trail passes, in top of ledge; aluminum tablet, marked "2218 PHNX"	2,217.885
Dudleyville, between 6 and 7 miles east of Ash Creek, bed of	2,210
Dudleyville, 4 miles east of; on southeast side of trail, at summit of steep short ascent, 400 feet northeast of wash; iron post, marked "2418 PHNX"	2,417.251
Dudleyville, east of; San Pedro River, bed of	1,910
Dudleyville, 170 feet southeast of post-office, in front of guide post in southeast corner of intersection of crossroads; iron post, marked "1950 PHNX"	1,949.618

DUDLEYVILLE, ALONG MAMMOTH AND RIVERSIDE ROAD, TO RIVERSIDE.

Dudleyville, 3 miles northwest of; by a corner of wire fence, northeast side of road, at bend; iron post, marked "1893 PHNX"	1,892.463
Dudleyville, 6 miles northwest of; on north side of road, at bend; iron post, marked "1866 PHNX"	1,865.578
Riverside, $6\frac{1}{4}$ miles southeast of; on southwest side of road, at summit of hill; iron post, marked "1927 PHNX"	1,926.545
Junction with road running south to Tucson, ground at forks	1,857
Riverside, $3\frac{1}{4}$ miles southeast of; on west side of road, at bend, on summit of hill; iron post, marked "1828 PHNX"	1,827.431

RIVERSIDE, ALONG MINERAL CREEK ROAD, TO RAY.

	Feet.
Gila River, bed of	1,754
Kelvin, $2\frac{1}{4}$ miles north of; on west side of road, northwest bank of Mineral Creek, about 800 feet south of large eroded cliff; iron post, marked "1869 PHNX"	1,868.942
Ray; in top of low ledge on east side of road nearly opposite mill, 100 feet north of company store; aluminum tablet, marked "2024 PHNX" ..	2,024.394

RAY, ALONG SALT RIVER VALLEY AND MINERAL CREEK WAGON ROAD,
TO PINAL.

Ray, $3\frac{1}{4}$ miles northwest of; on east side of gulch, at bend, in top of projecting ledge; aluminum tablet, marked "2838 PHNX"	2,838.199
Ray, nearly 4 miles northwest of; summit of hill, ground at	3,001
Ray, $6\frac{1}{4}$ miles northwest of; in top of limestone ledge on south side of road, at summit of hill; aluminum tablet, marked "3761 PHNX"	3,760.821
Pinal, $5\frac{3}{4}$ miles southeast of; on northeast side of canyon, opposite spring, 4.5 feet above bed of canyon, in sandstone ledge; aluminum tablet, marked "2953 PHNX"	2,952.716
Pinal, $2\frac{3}{4}$ miles southeast of; on northeast side of road, on top of a rocky mound, 250 feet northwest of wash, in top of embedded boulder; aluminum tablet, marked "2682 PHNX"	2,682.247

GLOBE, ALONG GLOBE AND PAYSON ROAD, TO BLACK WARRIOR.

Globe, $\frac{3}{4}$ mile northwest of court-house; 12 feet west of railroad track, at wagon-road crossing; iron post, marked "3461 PHNX"	3,460.893
Globe, $2\frac{1}{2}$ miles northwest of; on northeast side of road, opposite forks, at junction with Black Warrior road; iron post, marked "3348 PHNX"	3,347.946
Black Warrior, $1\frac{1}{4}$ miles southeast of; in top of brown sandstone rock 5 feet diameter by 3 feet high, 150 feet northwest of saloon, on southwest side of road, at mouth of Webster Gulch; aluminum tablet, marked "3349 PHNX"	3,349.023

BLACK WARRIOR TO CONTINENTAL MINE.

Black Warrior, $1\frac{3}{4}$ miles west of; 6 feet east of triple live-oak tree, at bend on south side of road; in top of sandstone boulder, aluminum tablet, marked "3759 PHNX"	3,759.192
Black Warrior, $5\frac{1}{2}$ miles west of; 25 feet northeast of road, 100 feet north of summit of hill on divide between Webster and Pinto creeks, about 1 mile east of Continental Copper Mine; in top of sandstone bowlder, aluminum tablet, marked "4578 PHNX"	4,577.912

MIAMI FLAT, VIA SCHULZE'S RANCH, ROGGENSTROHL'S SAWMILL, AND
KELLNER'S OLD SAWMILL SITE, TO GLOBE.

Schulze's ranch, $2\frac{3}{4}$ miles northeast of; on southwest side of western pass toll road, on southwest bank of Bloody Tanks wash, opposite Burnett's goat ranch; iron post, marked "3468 PHNX"	3,467.914
Schulze's ranch, $\frac{1}{4}$ mile southwest of; 45 feet southwest of gate; iron post, marked "3906 PHNX"	3,905.800
Schulze's ranch, $3\frac{3}{4}$ miles southwest of; on east side of road, at base of short, steep hill; in top of schist ledge, aluminum tablet, marked "4523 PHNX"	4,522.726

Feet.

Schulze's ranch, 6½ miles southwest of; on north side of road, on bank of Pinto Creek; in top of schist ledge, aluminum tablet, marked "4864 PHNX"	4,863.704
Pinal Mountain, summit of, ground on trail at	6,496
Globe, 11 miles southwest of; on north side of trail, 150 feet east of summit of mountain, 20 feet northeast of 15-inch pine tree; in top of granite boulder, aluminum tablet, marked "6487 PHNX"	6,486.322
Globe, 8¼ miles southwest of; on south side of small ravine, on east side of ridge toll road, 150 feet northeast of bridge across gulch; in top of gneiss rock bronze tablet, marked "4857 PHNX"	4,856.983
Globe, about 7 miles southwest of; junction with Russell Gulch road, ground at	4,558
Globe, 5¼ miles southwest of; 15 feet northeast of road, 50 feet north of sharp bend; in top of granite boulder, aluminum tablet, marked "4438 PHNX"	4,437.642

GLOBE, ALONG GLOBE AND PAYSON ROAD TO HARROLD'S RANCH.

Globe, 6 miles northwest of; in front of circular corral on northeast side of road, at Harrold's ranch, 9 feet southeast of 36-inch cottonwood tree; iron post, marked "3170 PHNX"	3,169.940
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GERONIMO AND SOLOMONSVILLE QUADRANGLES.

SAN CARLOS, SOUTHEASTERLY ALONG GILA VALLEY, GLOBE AND NORTHERN RAILWAY, TO SOLOMONSVILLE.

San Carlos, 4½ miles southeast of; 12 feet southwest of track, 230 feet southeast of trestle No. 206, opposite Indian trail crossing; iron post, marked "2458 PHNX"	2,457.729
San Carlos, 6¼ miles southeast of; in front of first telegraph pole northwest of county road crossing near Indian farm; iron post, marked "2504 PHNX"	2,503.561
San Carlos, 9¾ miles southeast of; 50 feet south of track opposite county road crossing, 1 mile west of Dewey siding; iron post, marked "2508 PHNX"	2,507.595
Geronimo, 11¼ miles northwest of; 25 feet northeast of track at east end of track opposite adobe ruins of old subagency buildings; iron post, marked "2550 PHNX"	2,549.593
Geronimo, 9 miles northwest of; by first telegraph pole northwest of mile board 77, 100 feet south of trestle No. 189; iron post, marked "2586 PHNX"	2,585.661
Geronimo, 6½ miles northwest of; 150 feet west of county road crossing at Navajo Point, 10 feet north of road; iron post, marked "2586 PHNX"	2,585.480
Geronimo, 4½ miles northwest of; by wire fence 50 feet northwest of track and opposite county road crossing, ¾ mile southeast of Indian farm; iron post, marked "2606 PHNX"	2,605.526
Geronimo; at southeast corner of Alexander Brothers' general store, 300 feet north of track; iron post, marked "2633 PHNX"	2,632.621
Fort Thomas, 2¼ miles northwest of; 30 feet southwest of track, on east side of wagon road coming in to railroad from the south, 350 yards southeast of mile board 64; iron post, marked "2673 PHNX"	2,672.651
Fort Thomas, 500 yards southeast of station; 30 feet south of wagon road crossing, 150 yards west of Alexander Brothers' general store; iron post, marked "2701 PHNX"	2,700.706

	Feet.
Fort Thomas, 3 miles southeast of; 9 feet east of wire-fence corner, 30 feet northeast of county road crossing, $\frac{1}{2}$ mile southeast of mile board 59; iron post, marked "2724 PHNX"	2,723.501
Matthews post-office, 0.3 mile northwest of; near telegraph pole at mile board 55, 80 feet southeast of section house; iron post, marked "2755 PHNX"	2,754.469
Matthews post-office, 1 mile northwest of; near angle of wire fence, 50 feet north of track at forks in road, 250 feet northwest of mile board 53; iron post, marked "2783 PHNX"	2,782.347
Matthews post-office, $1\frac{1}{2}$ miles southeast of; near telegraph pole 30 feet northeast of track, 100 feet southwest of Barney's store; iron post, marked "2813 PHNX"	2,812.653
Pima, 200 feet west of station; near warning signpost 30 feet south of main track; iron post, marked "2843 PHNX"	2,842.621
Central; 50 feet southeast of road crossing, 300 feet west of church, and opposite mile board 45; iron post, marked "2883 PHNX"	2,882.477
Thatcher; northwest end of station grounds, on east side of wagon road, 30 feet south of track, 35 feet southwest of switch head block; iron post, marked "2931 PHNX"	2,930.250
Safford, 140 feet east of station; on east side of street, 15 feet north of main track, 3 feet west of telephone pole; iron post, marked "2923 PHNX"	2,922.584
Safford, $2\frac{1}{2}$ miles southeast of; in front of telephone pole on south side of county road between Safford and Solomonsville, 15 feet southwest of track; iron post, marked "2952 PHNX"	2,951.509
Solomonsville, near telegraph pole 100 feet east of station; 20 feet southwest of main track; iron post, marked "2979 PHNX"	2,978.709
Solomonsville, in middle of front of school building, $3\frac{1}{2}$ feet above ground; aluminum tablet, marked "2976 PHNX"	2,975.754

DUNCAN AND CLIFTON QUADRANGLES.

SOLOMONSVILLE, VIA CORONADO, TO CLIFTON.

Solomonsville, $3\frac{1}{2}$ miles east of; in forks of road at junction of Solomonsville and Coronado toll road with Solomonsville and Duncan county road, 40 feet east of toll-road signboard; iron post, marked "3093 PHNX"	3,097.655
Solomonsville, $5\frac{1}{2}$ miles northeast of; on northwest side of road at bend; iron post, marked "3208 PHNX"	3,207.745
Solomonsville, between $6\frac{1}{2}$ and $7\frac{1}{2}$ miles northeast of; junction with first road running north, ground at	3,288
Solomonsville, between $6\frac{1}{2}$ and $7\frac{1}{2}$ miles northeast of; junction with second road running north, ground at	3,313
Solomonsville, $8\frac{1}{2}$ miles northeast of; on south side of road, at junction with abandoned road at bend, 120 feet southwest of point where telephone line crosses road; iron post, marked "3400 PHNX"	3,399.937
Solomonsville, 12 miles northeast of; in forks of road $2\frac{1}{2}$ miles southwest of tollgate; iron post, marked "3706 PHNX"	3,705.752
Solomonsville, $14\frac{1}{2}$ miles northeast of; at southeast corner of gate-keeper's house on north side of road, 40 feet east of tollgate; iron post, marked "4090 PHNX"	4,090.198
Coronado, $11\frac{1}{2}$ miles southwest of; on southeast side of road, opposite brown cliffs, $\frac{3}{4}$ miles east of tollgate in top of large sloping pink rock, aluminum tablet, marked "4394 PHNX"	4,394.226

	Feet.
Coronado, 8½ miles southwest of; 7 feet north of road at summit of pass over Peloncillo Range; iron post, marked "4804 PHNX"	4,803.696
Coronado, 5¾ miles southwest of; 10 feet southeast of road opposite gulch coming in from southeast; in top of malipais rock, aluminum tablet, marked "4386 PHNX"	4,386.297
Coronado, 2½ miles southwest of; on northwest side of road on rocky ridge; in top of ledge, aluminum tablet, marked "4037 PHNX"	4,037.029
Coronado, on east side of road near warning sign, 40 feet south of Arizona and New Mexico Railway track, 50 feet northeast of Coronado stage station; iron post, marked "3451 PHNX"	3,451.020
Arizona and New Mexico Railway crossing; top of rail	3,448.5
Gila River; bed of, at ford	3,430
Coronado, 3 miles northeast of; 15 feet south of point where road begins steep descent to Rattlesnake wash; iron post, marked "3816 PHNX"	3,815.665
Clifton, 6½ miles southeast of; on north side of road at top of short steep hill, about ½ mile southwest of Phillips's ranch; iron post, marked "4059 PHNX"	4,058.597
Clifton, 4½ miles southeast of; in top of embedded red boulder, 20 feet northeast of road at summit of hill, 600 feet east of telephone mile board 34; aluminum tablet, marked "4172 PHNX"	4,171.939
Clifton, southeast corner of post-office and library building; iron post, marked "3465 PHNX"	3,465.165

CLIFTON, ALONG ARIZONA AND NEW MEXICO RAILWAY, TO GUTHRIE.

Clifton, in front of station; top of rail	3,456
Bridge No. 1 over San Francisco River; top of rail	3,450
Clifton, 5½ miles southeast of; 35 feet west of main track, 250 feet south of north head block at north siding; in top of embedded boulder, aluminum tablet, marked "3798 PHNX"	3,797.731
Guthrie, 2½ miles northwest of; 500 feet southeast of milepost 9, 20 feet southwest of and 8 feet above track; aluminum tablet, marked "3588 PHNX"	3,588.159
Guthrie, northeast corner of section yard, 130 feet south of station; iron post, marked "3415 PHNX"	3,414.892

CORONADO, VIA SHELTON AND ASH PEAK, TO SOLOMONSVILLE.

Coronado, 4½ miles southeast of; 13 feet southwest of track, on curve near mouth of York Canyon; in top of ledge, aluminum tablet, marked "3502 PHNX"	3,502.251
Sheldon, 4.2 miles northwest of; 20 feet east of a trestle through which a wagon trail passes; iron post, marked "3520 PHNX"	3,520.043
Sheldon, 75 feet north of road crossing at depot platform; 60 feet west of track; iron post, marked "3570 PHNX"	3,569.620
Sheldon, 3.3 miles southwest of; 25 feet south of road, near point where road leaves gulch and crosses small divide; iron post, marked "3926 PHNX"	3,925.936
Ash Peak Spring, 150 feet northeast of; 125 feet northeast of road; iron post, marked "4184 PHNX"	4,184.144
Ash Peak Spring, 2.3 miles west of; summit of divide, 25 feet north of road, marked "4398 PHNX"	4,397.946

	Feet.
Ash Peak Spring, 5.7 miles west of; 15 feet north of road; iron post, marked "4117 PHNX"	4, 117. 002
Ash Peak Spring, 8.9 miles west of; 20 feet north of road, 300 feet north of ravine; iron post, marked "3865 PHNX"	3, 865. 064
Ash Peak Spring, 11 miles west of; 20 feet north of road, west bank of ravine; iron post, marked "3706 PHNX"	3, 706. 014
Ash Peak Spring, 14 miles west of; 20 feet north of road, iron post, marked "3481 PHNX"	3, 481. 541
Ash Peak Spring, 17.1 miles west of; 20 feet north of road, west bank of ravine; iron post, marked "3295 PHNX"	3, 295. 151
Ash Peak Spring, 19.4 miles west of; 15 feet north of road, south bank of ravine; iron post, marked "3195 PHNX"	3, 195. 130
Solomonville, 3½ miles east of; fork of Coronado toll road and Duncan road; iron post, marked "3098 PHNX"	3, 097. 655

CLIFTON, ALONG WAGON ROAD TO MORENCI, THENCE VIA LONGFELLOW
MINE AND CHASE CREEK TO METCALF.

Clifton, 2.3 miles west of; north side of Chase Creek, 0.5 mile east of rock house, edge of road at foot of hill; in white rock 2 by 3 feet and 12 inches high; aluminum tablet, marked "3703 PHNX"	3, 702. 777
Clifton, 3.5 miles northwest of; top of east ridge on Clifton and Morenci wagon road, 75 feet north of fork of road, in white rock 2 by 3 feet and 12 inches high; aluminum tablet, marked "4316 PHNX"	4, 316. 079
Morenci, 0.9 mile southeast of; 500 feet below trestle of second loop going up canyon, west side of road at foot of cliff, 2 feet higher than road; aluminum tablet, marked "4541 PHNX"	4, 540. 811
Morenci; northeast corner of Detroit Copper Company's store, 0.5 foot higher than water table on main entrance; aluminum tablet, marked "4839 PHNX"	4, 838. 582
Morenci; north side of trail on top of divide between Detroit Copper Company's store and Longfellow mine, 125 feet northeast of company hospital; iron post, marked "4992 PHNX"	4, 991. 973
Longfellow incline, 300 feet northwest of foot of; 25 feet north of railroad, south bank of Chase Creek, large rock; aluminum tablet, marked "3989 PHNX"	3, 989. 162
Metcalf, 0.8 mile south of; east side of railroad track at foot of bluff, 300 feet northeast of stone house at foot of Queen mine incline, in rock ledge 10 feet higher than track; aluminum tablet, marked "4294 PHNX"	4, 294. 041
Metcalf, 900 feet south of Metcalf mine incline; east of railroad track, foot of rock ledge, 8 feet higher than track; aluminum tablet, marked "4415 PHNX"	4, 414. 928
Metcalf, southeast corner of Shannon Mine Company's office; iron post, marked "5543 PHNX"	5, 543. 103
Metcalf, summit of Shannon Mountain; bronze tablet, marked "5628 PHNX"	5, 627. 935

CLIFTON, UP SAN FRANCISCO RIVER 6 MILES.

Harper's ranch, 1.9 miles north of; foot of east bluff of canyon, 300 feet east of river, 50 feet east of road; iron post, marked "3624 PHNX" ..	3, 623. 993
San Francisco River, surface of water ..	3, 605
Harper's ranch, 0.2 mile northeast of; east side of river at foot of cliff 25 feet high, 75 feet east of road; iron post, marked "3579 PHNX" ..	3, 578. 743

Feet.

Evans's point, Moody's blacksmith shop; 500 feet east of southwest corner of, 25 feet north of river, north side of road; reddish granite ledge, aluminum tablet, marked "3542 PHNX"	3,541.765
Potter's ranch, south side of entrance to, on west side of road; iron post, marked "3504 PHNX"	3,503.834
Clifton, 0.7 mile north of post-office; east edge of road, east side of river, in foot of red ledge of rock; iron post, marked "3467 PHNX"	3,466.968
San Francisco River, surface of water	3,458

YAVAPAI AND MARICOPA COUNTIES.

BRADSHAW MOUNTAINS QUADRANGLE.

The elevations in the following list are based on an iron post set in the court-house at Prescott and marked "5346 PRSCT." The elevation of this bench mark was determined from the corrected elevation of the Santa Fe, Prescott and Phoenix Railroad.

The leveling was done in 1900 and 1901 by Mr. John P. Darling and Mr. John T. Stewart, under the general direction of Mr. E. M. Douglas, geographer.

All bench marks depending on this datum are stamped PRSCT, in addition to the figures of elevation.

PRESCOTT SOUTHWARD TO BRIGGS, VIA BUENO, SENATOR MINE, MINNEHAHA, AND LEHMANS MINE.

Feet.

Prescott court-house, 60 feet north of; 5 feet east of sidewalk in plaza; iron post, marked "5346 PRSCT"	5,346.077
Prescott, $2\frac{1}{4}$ miles south of; at intersection of Crown King and Jersey Lilly roads, 225 feet south of bridge over small gulch; iron post, marked "5543 PRSCT"	5,543.087
Whiteside's house, 0.4 mile south of; 0.6 mile north of Groom Creek bridge; iron post, marked "6149 PRSCT"	6,149.401
Kelly's station, $\frac{1}{4}$ mile south of; $\frac{3}{4}$ mile north of forks of road to Reliance mine, top of small hill 10 feet north of road; iron post, marked "6396 PRSCT"	6,396.215
Covered bridge, 1.6 miles south of; at intersection of Mount Union and Crown King roads and on divide between Maple Gulch and Crook Canyon; iron post, marked "7187 PRSCT"	7,187.526
Palace station, 75 feet north of; 1.36 miles south of burnt mill, 20 feet west of road; iron post, marked "5847 PRSCT"	5,847.470
Coys station, 125 feet west of; at intersection of Crown King and Pine Flat roads, 10 feet south of road, in outcrop rock; aluminum tablet, marked "5563 PRSCT"	5,562.684
Bueno, or Johnson's station, 125 feet north of house; 3 feet east of road, in rock; aluminum tablet, marked "5258 PRSCT"	5,258.363
Bueno, $2\frac{1}{4}$ miles south of; on divide between Battle Flat Blind Indian Creek, 8 feet east of road; iron post, marked "5740 PRSCT"	5,740.371
Roach's quartz mill, $\frac{1}{8}$ mile north of; top of hill between Blind Indian Creek and a small creek, 15 feet east of road; iron post, marked "5390 PRSCT"	5,390.263
Hooper post-office, $1\frac{1}{2}$ miles south of; in forks of Crown King and Minnehaha roads; iron post, marked "5968 PRSCT"	5,967.998

	Feet.
Minnehaha, 3.5 miles north of; at Peterson's deserted ranch, east side of road; iron post, marked "5244 PRSCT"	5, 242.571
Minnehaha; 75 feet south of post-office, east side of road, 1,400 feet south of Buttons Mine; iron post, marked "5440 PRSCT"	5, 438.547
Minnehaha, 3.3 miles southwest of; 200 feet southwest of Fenton's old ranch, 25 feet southeast of intersection of old Phoenix road with Oak Creek road; iron post, marked "4354 PRSCT"	4, 352.609
Briggs, 4.5 miles north of; 1.5 miles north of Lehman's mine, 40 feet east of road, on a rocky point on ridge near divide; aluminum tablet, marked "4569 PRSCT"	4, 567.542
Copperopolis mine, 1.1 miles north of; 125 feet east of trail, in point of rocky ridge; aluminum tablet, marked "3939 PRSCT"	3, 937.649
Briggs; 400 feet north of post-office; 50 feet west of road, 15 feet higher than creek bed; aluminum tablet, marked "2759 PRSCT"	2, 757.614

BRIGGS TO MAYER, VIA HOT SPRINGS, FROG TANKS, NEW RIVER,
GODDARD, AND CORDES.

Briggs, 1.1 miles southeast of; north side of road at forks of road running to Whipsaw mine; foot of cliff on north side of Castle Creek; iron post, marked "2636 PRSCT"	2, 634.653
Hot Springs, 5.6 miles northwest of; west side of Castle Creek, west side of road; iron post, marked "2350 PRSCT"	2, 348.724
Hot Springs, 2 miles northwest of; 30 feet south of Hot Springs Junction road, south side of Castle Creek; iron post, marked "2090 PRSCT"	2, 088.981
Hot Springs; 20 feet east of hotel office; iron post, marked "1971 PRSCT"	1, 969.624
Dripping Springs, 700 feet northwest of; foot of intersection of north bank of Castle Creek and west bank of a ravine coming from east, 40 feet north of road; iron post, marked "1806 PRSCT"	1, 804.664
Dripping Springs, 3.6 miles southeast of; foot of cliff 15 feet high, north side of Castle Creek, 50 feet north of road; iron post, marked "1608 PRSCT"	1, 606.460
Castle Creek, 275 feet northwest of mouth of; foot of north bank of Castle Creek, 50 feet east of rock ledge; iron post, marked "1489 PRSCT"	1, 487.623
Aqua Fria River, bed of, at road crossing	1, 432
Frog Tank, 400 feet northwest of; on east side of river, 63 feet higher than river, west side of old road in rock ledge; aluminum tablet, marked "1495 PRSCT"	1, 493.677
Lower New River, 6.8 miles southwest of; top of ridge between two small washes, 15 feet south of road; iron post, marked "1694 PRSCT"	1, 692.752
Lower New River, 3.1 miles southwest of; 75 feet east of foot of bench on west side of New River, west side of trail; iron post, marked "1832 PRSCT"	1, 830.866
Lower New River, southwest corner of yard, east side of road; iron post, marked "1984 PRSCT"	1, 982.720
Alkire ranch, 10 feet north of yard gate, west side of road; iron post, marked "2155 PRSCT"	2, 153.751
Hudson, 500 feet northeast of abandoned house, north bank of creek, south side of road; iron post, marked "1931 PRSCT"	1, 929.953
Goddard, 200 feet southeast of ranch; west side of road; iron post, marked "1991 PRSCT"	1, 989.717

	Feet.
Aqua Fria River, bed of, at crossing	1,970
Black Canyon Creek, 50 feet south of; on point in bend of creek, 50 feet east of road; iron post, marked "2020 PRSCT"	2,018.965
Bumble Bee, 3 miles south of; 60 feet south of small dry creek, 10 feet east of road; iron post, marked "2515 PRSCT"	2,513.954
Bumble Bee store, 200 feet northeast of; 20 feet west of road; iron post, marked "2509 PRSCT"	2,508.068
Bumble Bee, 2 $\frac{3}{4}$ miles north of; 6 miles south of Cordes, in forks of road; iron post, marked "2686 PRSCT"	2,684.814
Cordes, 3 miles south of; in forks of road at Hidden Treasure mine, 20 feet west of road; iron post, marked "3074 PRSCT"	3,072.990
Cordes, 150 feet west of post-office, 60 feet west of storehouse, 25 feet south of road; iron post, marked "3762 PRSCT"	3,761.068
Cordes, 2 $\frac{1}{2}$ miles north of; 6 $\frac{1}{2}$ miles south of Mayer, 10 feet east of road, on top of small raise; iron post, marked "4024 PRSCT"	4,022.925
Mayer, 3 $\frac{1}{4}$ miles south of; 30 feet east of road, on top of hill; iron post, marked "4353 PRSCT"	4,351.756

MAYER TO PRESCOTT, VIA BIG BUG AND LYNX CREEK.

Mayer, $\frac{1}{2}$ mile north of railroad depot, 25 feet west of road, 50 feet west of Big Bug Creek; iron post, marked "4392 PRSCT"	4,390.967
Mayer, 2 $\frac{1}{2}$ miles northwest of; 400 feet north of McMichael's ranch, 180 feet west of railroad track, 20 feet northeast of road; iron post, marked "4605 PRSCT"	4,603.798
Old Big Bug Town, 1 mile north of Big Bug post-office, in forks of Big Bug and McCabe roads; iron post, marked "5069 PRSCT"	5,067.877
Providence, $\frac{3}{4}$ mile northwest of post-office, at forks in road to Post-master mine; iron post, marked "5620 PRSCT"	5,619.182
Steeze ranch, 1 $\frac{1}{2}$ miles northwest of; on top of divide between Big Bug and Lynx creeks; iron post, marked "6995 PRSCT"	6,994.363
Big Bug and Lynx Creek-Prescott road, 1 $\frac{1}{4}$ miles northwest of intersection of; on top of hill, 20 feet south of road; iron post, marked "6225 PRSCT"	6,224.100
Sevenmile house, $\frac{1}{4}$ mile southeast of; in forks of Lynx Creek-Prescott and Lynx Creek Dam roads; iron post, marked "5557 PRSCT"	5,555.799
Fourmile house, 150 feet northeast of; at junction of Prescott-Lynx Creek and Black Canyon roads; iron post, marked "5565 PRSCT"	5,563.794

BUENO TO MAYER, VIA BATTLE FLAT.

Bueno, 5 miles east of; 2 $\frac{1}{4}$ miles west of Goat ranch, on bank of Tuscumbia Creek, 15 feet south of road; iron post, marked "5027 PRSCT" ..	5,027.322
Goat ranch, $\frac{1}{2}$ mile northeast of; top of hill between Peck Canyon and Bear Creek. 15 feet east of road; iron post, marked "4638 PRSCT" ..	4,638.348
Wolf Creek, 1 mile northeast of; summit of hill between Wolf Creek and Dead Cow Gulch, slate outcrop 20 feet north of road; aluminum tablet, marked "4839 PRSCT"	4,838.628
Mayer, 1 $\frac{1}{2}$ miles southwest of; at forks of Crown King and Old Virgin Mary roads; iron post, marked "4625 PRSCT"	4,624.304

CROWN KING TO ALEXANDRIA.

Crown King, 2 $\frac{1}{4}$ miles north of; 4 $\frac{3}{4}$ miles south of Hooper post-office, top of divide, 15 feet west of road; iron post, marked "6769 PRSCT"	6,768.924
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	Feet.
Crown King, 75 feet north of saloon at intersection of Prescott-Crown King and Mayer-Crown King roads, 25 feet north of Prescott road; iron post, marked "5975 PRSCT"	5,975.304
Crown King, 3 miles north of; $\frac{1}{2}$ mile north of top of divide, 20 feet west of road; iron post, marked "7016 PRSCT"	7,015.961
Alexandria; $3\frac{1}{2}$ miles north of top of divide, 8 feet north of road, quartz rock; aluminum tablet, marked "5391 PRSCT"	5,391.414

TOP OF MOUNT UNION, NOT CHECKED.

Mount Union, highest point of; bronze tablet marking primary triangulation station, marked "7971 PRSCT"	7,970.760
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PACIFIC SECTION OF TOPOGRAPHY.

In this section, under the direction of Mr. Richard U. Goode, geographer in charge, spirit leveling was continued for the control of the regular topographic work executed during the year in the various localities, as follows:

IDAHO-MONTANA.

SHOSHONE AND MISSOULA COUNTIES..

CŒUR D'ALENE MINING REGION.

The elevations in the following list are in continuation of leveling reported upon in the Appendix to the Twenty-first Annual, and are based on an aluminum tablet in the top of the latitude pier in the grounds of the county court-house at Spokane, Wash., accepted as 1,890.95± feet above mean sea level. These elevations depend directly upon that of a bench mark at Lane, Idaho, as published on page 522 of that Appendix.

The leveling was done, under the direction of Mr. Van H. Manning, topographer, by Mr. F. E. Washburn, levelman.

All bench marks depending on this datum are stamped with the letter "S" in addition to the figures of elevation.

LANE, VIA OREGON RAILWAY AND NAVIGATION COMPANY RAILROAD AND NORTHERN PACIFIC RAILROAD, TO LOOKOUT AT SUMMIT OF BITTER-ROOT MOUNTAINS.

	Feet.
Lane, 600 feet southeast of post-office and station, 40 feet north of house, in granite bowlder 24 by 36 by 40; aluminum bolt, marked "2153 S" (see Appendix to 21st Ann. Rpt.)	2,153.082
Lane, 1 mile east of; milepost 446, spike in	2,132.29
Milepost 447, spike in	2,136.65
Milepost 448, spike in	2,137.52
Milepost 449, spike in	2,136.46
Milepost 450, spike in	2,133.60
Milepost 451, spike in	2,136.69
Dudley, milepost 452, spike in	2,140.60
Dudley, 1 mile east of; milepost 453, spike in	2,143.25

	Feet.
Milepost 454, spike in	2, 140. 13
Milepost 455, spike in	2, 134. 94
Milepost 456, spike in	2, 151. 02
Milepost 457, spike in	2, 142. 68
Cataldo, at northwest corner of store; telephone pole, spike in	2, 144. 05
Cataldo, 0.6 mile northeast of; 30 feet northwest of northeast corner of house; fence post, spike in	2, 143. 33
Cataldo, 1.6 miles northeast of; 350 feet northeast of house; telephone pole, spike in	2, 212. 43
Cataldo, 2.6 miles northeast of; 20 feet south of old railroad track, at beginning of cut, 400 feet from barn; telephone pole, spike in	2, 177. 80
Kingston; 600 feet northeast of schoolhouse, 500 feet northeast of cross-roads, 450 feet north of house; telephone pole, spike in	2, 198. 89
Kingston, 1 mile east of; 12 feet southeast of road crossing at beginning of cut; telephone pole, spike in	2, 297. 85
Kingston, 2 miles east of; 475 feet southwest of old bridge, 250 feet south of house, 15 feet north of track; telephone pole, spike in	2, 209. 73
Kingston, 3 miles east of; third telephone pole from east end of cut; spike in	2, 211. 66
Kingston, 4 miles east of; 60 feet southeast of fence intersection; fourth telephone pole west of cut; spike in	2, 214. 57
Kingston, 4.7 miles east of; 125 feet west of intersection of Oregon Railway and Navigation Company Railroad and old Northern Pacific Railroad track; post, spike in	2, 227. 23
Kingston, 5 miles east of; 30 feet south of track; telephone pole, spike in	2, 238. 81
Milepost 467 of Oregon Railway and Navigation Company Railroad, spike in	2, 248. 33
Milepost 468, spike in	2, 272. 41
Kellogg; 200 feet southeast of depot, 5 feet west of northwest corner of Hotel McKinniss; iron post, marked "2305 S"	2, 305. 166
Kellogg, 1.1 miles east of; 30 feet west of road crossing; milepost 470, spike in	2, 342. 70
Milepost 471, 15 feet south of road crossing, spike in	2, 359. 48
Milepost 472, 120 feet west of road crossing, spike in	2, 382. 31
Milepost 473, spike in	2, 418. 05
Milepost 474, 550 feet west of road crossing, spike in	2, 457. 70
Milepost 475, spike in	2, 510. 20
Osburn; 3 feet northeast of northeast corner of Osburn grocery store on west side of Mullan avenue, 300 feet northwest of hotel, 4 feet south-west of sidewalk; iron post, marked "2521 S"	2, 521. 320
Osburn, 0.7 mile east of; milepost 476, spike in	2, 549. 85
Osburn, 1.7 miles east of; 180 feet south of road crossing, 80 feet north-east of track; telephone pole, spike in	2, 604. 41
Milepost 478, spike in	2, 637. 30
Milepost 479, spike in	2, 690. 68
Wallace; 7 feet south of northeast corner of schoolhouse; iron post, marked "2728 S"	2, 727. 952
Wallace, 0.6 mile east of; second telegraph pole east of track intersection of Oregon Railway and Navigation Company's Railroad and Northern Pacific Railroad, spike in	2, 754. 92
Wallace, 1.4 miles east of; opposite Northern Pacific milepost D 128, telephone pole, spike in	2, 801. 40
Milepost D 126, spike in	2, 881. 27
Milepost D 125, spike in	2, 949. 47

	Feet.
Milepost D 124, spike in. in Grouse Gulch.....	3, 031.20
Milepost D 123, 25 feet northeast of; 35 feet northeast of track; telephone pole, spike in.....	3, 123.69
Milepost D 122, opposite, 6 feet west of track; spike in post.....	3, 196.01
Mullan, 15 feet west of depot, at base of steps and at corner of sidewalk; iron post, marked "3244 S".....	3, 244.301
Mullan, 3 miles east of; 40 feet north of track; opposite milepost D 121, telephone pole, spike in.....	3, 268.41
Milepost D 120, spike in.....	3, 355.69
Milepost D 119, spike in.....	3, 459.89
Milepost D 118, spike in.....	3, 572.86
Trestle 71, east end of; spike in telephone pole.....	3, 691.01
Mullan, 4.3 miles east of; 30 feet east of crossing of highest track on switch back; railroad crossing post, spike in.....	4, 385.94
Milepost D 111, spike in.....	4, 455.15
Milepost D 110, spike in.....	4, 642.62
Lookout, 30 feet west of depot, 250 feet south of the Idaho-Montana State line; iron post, marked "4727 S".....	4, 726.714

WALLACE, VIA NORTHERN PACIFIC RAILROAD, GEM AND BURKE, TO
GLIDDEN PASS.

Milepost 1, between Oregon Railway and Navigation Company Railroad and Northern Pacific Railroad tracks; spike in.....	2, 856.01
Milepost 2, spike in.....	2, 991.98
Milepost 3, 40 feet northwest of; telephone pole, spike in.....	3, 127.55
Granite, opposite Granite Mill, 10 feet north of Canyon Creek; pine stump, spike in root of.....	3, 167.65
Gem; in granite boulder, 5 by 5 by 4 feet, 725 feet east of Granite Mill. 6 feet west of house, on fence line 45 feet north of Northern Pacific Railroad, 20 feet north of wagon road; aluminum bolt, marked "3197 S".....	3, 196.491
Gem; spike in milepost 4.....	3, 284.56
Helena Frisco Mill; in front of; ground.....	3, 308
Mammoth Mill; track below Mammoth compressor.....	3, 427
Milepost 5, spike in.....	3, 447.33
Standard Mill; track elevation under tramway.....	3, 549
Mace; milepost 6, spike in.....	3, 637.77
Burke; 180 feet west of Northern Pacific depot, 15 feet north of track, 15 feet east of house, 17 feet northeast of telephone pole, 60 feet west of road crossing, 10 feet north of wagon road, in rock at base of cliff; aluminum tablet, marked "3736 S".....	3, 736.163
Burke, Northern Pacific depot; top of rail in front of.....	3, 470.4
Burke, eastern part of; 0.6 mile northeast of east entrance to Gorge Gulch, 20 feet south of road, 12 feet south of fence, 15 feet north of Canyon Creek; spike in telephone pole.....	3, 830.82
Burke, 1.6 miles northeast of; south of Tiger Poorman electric station, 18 feet north of wagon road; spruce tree, spike in.....	4, 099.78
Burke, 3 miles east of; 100 feet north of flume, 1 foot south of road; fir tree, 4 inches in diameter, spike in root of.....	4, 783.11
Burke, 4 miles east of; 2 feet north of road; balsam tree, 5 inches in diameter, spike in root of.....	5, 162.45
Glidden Pass, summit of Bitterroot Mountains, 15 feet east of road; in white limestone pillar, 5 by 6 inches at top, projecting 4 inches above ground; aluminum tablet, marked "5768 S.".....	5, 767.742

OSBURN, VIA BEAVER STATION, DELTA, THIARD, AND MURRAY, TO
SUMMIT OF BITTERROOT MOUNTAINS.

	Feet.
Osburn, 1 mile northeast of; telephone pole, 6 feet north of road, spike in	2,626.34
Osburn, 2 miles northeast of; telephone pole, 6 feet east of road, spike in	2,769.01
Osburn, 3 miles northeast of; blazed cedar tree 8 feet east of road, spike in	3,074.49
Osburn, 4 miles northeast of; telephone pole 6 feet south of road, spike in	3,488.34
Osburn, 5 miles northeast of; 7 feet southeast of road, 20 feet northeast of spring; telephone pole, spike in	3,921.75
Summit of mountain between Osburn and Beaver station; iron post, marked "4080 S."	4,079.949
Osburn, 6½ miles northeast of; 60 feet north of bridge and 15 feet east of road; pine stump, spike in	3,343.66
Osburn, 7½ miles north of; 200 feet south of bridge, 6 feet east of road; telephone pole, spike in	2,814.87
Beaver station, 6 feet north of northeast corner of house; 3 feet east of fence, 5 feet north of porch; iron post, marked "2785 S."	2,784.831
Beaver station, 0.9 mile northwest of; telephone pole east side of road, spike in	2,693.98
Beaver station, 1.9 miles northwest of; 900 feet north of house; telephone pole, spike in	2,618.69
Beaver station, 2.9 miles northwest of; 40 feet north of rock cut; old tree on west side of road, spike in	2,557.31
Delta, at street intersection; flag pole, spike in	2,516.88
Delta, 50 feet northwest of flag pole; 8 feet southeast of cabin, 150 feet west of post-office; iron post, marked "2517 S."	2,517.229
Delta, 0.5 mile northeast of; 10 feet west of spring; spike in telephone pole	2,570.58
Thiard, in front of postoffice; ground	2,671
Thiard, 0.3 mile northeast of; 20 feet south of road; charred tree, spike in	2,727.68
Thiard, 1.3 miles northeast of; 5 feet north of road; fir tree, spike in	3,128.65
Summit of mountain between Murray and Delta; 25 feet north of road, 6 feet south of large stump; iron post, marked "3321 S."	3,321.275
Summit of mountain, 0.6 mile east of; support to telephone pole, spike in	3,212.10
Summit of mountain, 1.6 miles east of; 12 feet northeast of mine entrance, telephone pole, spike in	2,999.86
Summit of mountain, 2.6 miles east of; 6 feet north of road, 400 feet east of Tiger Gulch; pine stump, spike in	2,788.85
Murray; at intersection of Main and Second streets, 6 feet west of southwest corner of printing office; iron post, marked "2772 S."	2,771.881
Murray, 1 mile east of; spike in root of pine stump, 2 feet west of road	2,910.78
Livingston; in front of Idaho Mill; ground	2,925
Murray, 2 miles east of; 20 feet south of road; spike in root of charred stump	2,942.28
Murray, 3 miles east of; 4 feet northeast of road; spike in charred stump	3,017.80
Raven; in bowlder 6 inches above ground, at base of stump 100 feet south of old sawmill, at north end of Burke trail, at the mouth of Granite Creek; aluminum tablet, marked "3060 S."	3,060.207
Raven, 0.3 mile east of; 2 feet south of road, 60 feet west of fork of road; spike in top of log	3,130.58
Raven, 1.1 miles east of; 20 feet south of road; pine tree 8 inches in diameter, spike in root of	3,257.60

	Feet.
Sullivan, 7 feet north of road, 1.5 feet west of window facing road; base log of log house, spike in	3, 476.69
Sullivan, 1 mile east of; 2 feet north of road, 35 feet northeast of blazed tree, on south side of road; sandstone 2½ by 2 by 1 foot, chisel marked +	3, 907.56
Sullivan, 2 miles east of; 3 feet north of road; fir tree, spike in	4, 408.44
Summit of the Bitterroot Mountains; 25 feet northeast of road, 25 feet southeast of flume; iron post, marked "4862 S."	4, 861.738

BURKE, VIA TRAIL, TO RAVEN.

Burke, 1 mile north of; 2 feet south of trail at switchback; spruce tree 5 inches in diameter, spike in root of	4, 632.14
Burke, 1.9 miles north of; south side of trail; crooked tree 8 inches in diameter, spike in	5, 612.50
Summit, 6 feet east of trail; iron post, marked "5839 S."	5, 838.914
Summit, 1 mile north of; 6 feet east of trail; spike in stump	4, 975.85
Summit, 1.8 miles north of; pine tree, spike in root of	3, 986.00
Summit, 2.8 miles north of; 10 feet west of trail, 30 feet east of creek; cedar tree 3.5 feet in diameter, spike in root of	3, 497.10
Summit, 3.8 miles north of; 1 mile south of Raven, 3 feet west of trail; cedar tree 1.5 feet in diameter, spike in	3, 238.29

MURRAY, VIA EAGLE AND UP EAST FORK OF EAGLE CREEK.

Murray, 0.7 mile northwest of; 8 feet south of road, opposite Missoula Gulch; pine stump, spike in	2, 733.02
Murray, 1.7 miles northwest of; 5 feet south of road, 15 feet south of old flume; popular tree, spike in	2, 653.47
Murray, 2.7 miles northwest of; 15 feet east of road; spike in tree	2, 600.96
Eagle, 20 feet north of cabin, 30 feet east of road; iron post, marked "2546 S."	2, 546.534
Eagle, 360 feet west of white house, 120 feet north of road; fir tree, spike in	2, 549.34
Eagle, 1 mile east of; 4 feet south of road, 450 feet southeast of house; spruce tree 5 inches in diameter, spike in	2, 619.22
Eagle, 1.2 miles east of; 50 feet east of forks of roads; spruce tree, spike in	2, 626.16
Eagle, 2 miles east of; 30 feet east of Eagle Creek, on north side of road; cedar tree, spike in	2, 703.22
Eagle, 3 miles east of; 2 feet north of road; fir tree, spike in	2, 797.06
Eagle, 4 miles east of; 400 feet northeast of branches of creek, at north side of road, in quartz rock 5 by 4 by 4 feet at base of cliff; copper bolt, marked "2892 S."	2, 892.123

EAGLE, VIA PRICHARD CREEK, TO NORTH FORK OF CŒUR D'ALENE RIVER.

Eagle, 1 mile west of; 4 feet north of road; cedar tree, spike in	2, 490.62
Eagle, 2 miles west of; south of road; pine tree 15 inches in diameter, spike in	2, 448.30
Eagle, 2.9 miles west of; 25 feet south of road, 300 feet south of house, 40 feet south of large gate; fir tree, spike in	2, 404.27

BEAVER STATION TO WALLACE.

Beaver Station, 1.1 miles east of; at intersection of Carbon and Nine-Mile roads; mail post, spike in	3, 033.66
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	Feet.
Beaver Station, 2 miles southeast of; 12 feet east of road; pine tree 1 inch in diameter, spike in.....	3,501.69
Beaver Station, 3 miles southeast of; 6 feet east of road; spruce tree 2 feet in diameter, spike in	3,848.35
Dobsons Pass, 12 feet south of road; iron post, marked "4179 S."	4,179.380
Dobsons Pass, 1.1 miles southeast of; 10 feet west of road; tamarack tree 1.6 inches in diameter, spike in root of.....	3,801.58
Dobsons Pass, 2 miles southeast of; 4 feet west of sharp bend in road; pine stump 15 feet high, spike in base of	3,488.93
Bradyville, 100 feet west of; telephone station, 33 feet east of railroad track, 50 feet west of wagon road; telephone pole, spike in	3,145.04
Wallace, 2.2 miles north of; 12 feet east of track, 30 feet east of Gorge Creek; telephone pole, spike in	2,970.54
Wallace, 1.3 miles north of; 12 feet east of track, 75 feet east of creek, 125 feet east of pond; telephone pole, spike in	2,866.51
Wallace, 0.3 mile north of; 300 feet north of bridge, 25 feet west of track, 30 feet east of creek; large pine stump, spike in	2,741.99

ELEVATIONS DETERMINED BY VERTICAL ANGULATION.

Stevens Peak; in rocky cliff, 100 feet northeast of triangulation station; aluminum tablet, marked "6826 S. V. A".....	6,826
Sunset Peak; in rock 14 by 10 by 10 feet and sunk in ground under mound of rock, 30 feet north of a mineral monument; aluminum tablet, marked "6424 S. V. A"	6,424
Granite Peak; in a granite boulder at base of mound of rock 10 feet high; aluminum tablet, marked "6810 S. V. A".....	6,810
Murray Peak; in rock 8 inches above ground, in ledge of rock 24 inches long, 8 inches wide, 10 feet south of triangulation station; aluminum tablet, marked "5920 S. V. A".....	5,920

CALIFORNIA.

RIVERSIDE AND SAN DIEGO COUNTIES.

RAMONA AND INDIO QUADRANGLES.

The elevations in the following list are based on a bronze tablet in the foundation of the public school building at Temecula, established in 1897, the height of which was accepted as 1,018.951 feet.

The leveling was done by Mr. C. C. Ward, levelman, in charge.

All bench marks depending on this datum are stamped with the letter "T" in addition to the figures of elevation.

TEMECULA, VIA NIGGER CANYON AND OAK GROVE, TO WARNER'S RANCH.

	Feet.
Temecula, 8½ miles east of, southeast corner of private road crossing just north of dry wash of Temecula River; iron post, marked "1228 T".....	1,228.075
Nigger Canyon, at mouth of; on south side, at gate near Chinese cabin, about 15 feet from rock point; basalt boulder 2½ by 4 by 6 feet, point on top of.....	1,264.90
Nigger Canyon, about 1 mile northwest of head of, 20 feet south of road; willow tree 18 inches in diameter, nail in root of.....	1,315.94

Feet.

Nigger Canyon, at head of, about 300 feet west of junction with "Arroyo Seco" canyon; on top of concrete curb of northernmost of 6 wells which extend across the canyon; chiseled point.....	1,351.35
Nigger Canyon, $1\frac{1}{4}$ miles southeast of, 65 feet north of road to Warner's ranch and 50 feet east of road across creek; elder tree 1 foot in diameter, wire nail in butt of	1,442.07
Nigger Canyon, $1\frac{1}{4}$ miles southeast of, 10 feet south of road, at junction of Temecula-Warner road with road to north, 120 feet southwest of elder tree: iron post, marked "1450 T"	1,449.983
Radec post-office, about 2.6 miles northwest of, at south side of road; cottonwood tree $2\frac{1}{2}$ feet in diameter, nail in butt of	1,504.10
Radec post-office, $1\frac{1}{2}$ miles northwest of, at road crossing; bed of Temecula creek	1,516
Radec post-office, 1 mile northwest of, 20 feet south of road on summit of ridge; slab of granite 4 feet high broken from large granite boulder, point on top of	1,707.63
Radec post-office, $\frac{1}{4}$ mile north of, at junction with road to San Jacinto; iron post, marked "1694 T"	1,693.968
Radec post-office, $1\frac{1}{2}$ miles southeast of, at junction with road to south, fence corner post, nail in top of	1,870.11
Aguanga Valley store, $\frac{3}{4}$ mile northwest of, on north side of road opposite fence corner; nail in butt of elder tree 8 inches in diameter	1,906.67
Aguanga Valley store, at northeast corner of; nail in hub	1,930.20
Bergman post-office, junction with road to, at foot of sign post; ground	1,975
Cienega schoolhouse, 100 feet north of, 55 feet north of fence; granite boulder in road 8 by 6 by 4 feet, point on top of	1,988.84
Cienega schoolhouse, 2 feet south of fence and 3 feet east of front gate; iron post, marked "1988 T"	1,987.915
Cienega schoolhouse, $1\frac{1}{2}$ miles east of, at north edge of road on summit of divide; granite boulder 2 by 2 by 3 feet, point on top of	2,475.95
Cienega schoolhouse, 2.8 miles southeast of, at junction with road from west, at foot of sign post; nail in hub	2,436.38
Cienega schoolhouse, $2\frac{3}{4}$ miles southeast of, in flat draw, 10 feet north of road; iron post, marked "2439 T"	2,438.979
Oak Grove schoolhouse, about $\frac{3}{4}$ mile northwest of, south side of road at junction with private road to northeast; embedded boulder 2 feet in diameter, point on top of	2,707.76
Oak Grove schoolhouse, southwest corner of; embedded rock 1 foot square, point on top of	2,750.36
Oak Grove schoolhouse, 50 feet south of, in yard, at east side of gate; iron post, marked "2751 T"	2,750.937
Oak Grove schoolhouse, $\frac{3}{4}$ mile south of, east side of road, 110 feet south of junction of roads; oak tree 2 feet in diameter, nail in root of	2,831.37
Oak Grove schoolhouse, $1\frac{1}{4}$ miles southeast of, south side of road, at west side of dry creek bed; burned oak tree 2 feet in diameter, nail in butt of	3,025.37
Oak Grove schoolhouse, 3 miles southeast of, right side of road; nail in butt of oak tree 6 inches in diameter	3,196.27
Oak Grove schoolhouse, 4 miles southeast of, 15 feet east of road on summit of divide between Temecula Creek and San Luis Rey River, 150 feet north of fence corner; oak tree $2\frac{1}{2}$ feet in diameter, nail in butt of	3,284.87
Oak Grove schoolhouse, 4 miles southeast of; T. 9 S., R. 2 E., sec. 35, San Bernardino meridian, about 400 feet west of $\frac{1}{4}$ corner, east side of; 10 feet west of road on summit of divide between Temecula and San Luis Rey rivers, 3 feet east of fence corner; iron post, marked "3282 T"	3,282.016

Feet.

Porta Cruz, about 4 miles north of, T. 10 S., R. 2 E., sec. 1, about 1,000 feet south of $\frac{1}{4}$ corner north side of; 40 feet north of road at white gate, on west side of green grass plot, oak tree $2\frac{1}{2}$ feet in diameter, nail in butt of	3, 153. 16
Porta Cruz, 3 miles northwest of, east side of dry wash at road crossing, near junction of channels, $\frac{1}{4}$ mile west of junction with road to Agua Caliente; cottonwood tree 2 feet in diameter, nail in root of	3, 024. 27
Porta Cruz, $1\frac{3}{4}$ miles north of, on west side of road; rock 3 by 2 by $1\frac{1}{2}$ feet, point on top of	2, 978. 83
Porta Cruz, about $\frac{1}{2}$ mile northeast of, 45 feet south of road; granite boulder $6\frac{1}{2}$ by 3 by $2\frac{1}{2}$ feet, top of	2, 918. 99
Porta Cruz, about $\frac{1}{2}$ mile northeast of, about 25 feet south of road; iron post, marked "2916 T"	2, 916. 046
Porta Cruz, at junction of road to ranch house with road to Julian, Mesa Grande, Pala, etc.: ground	2, 848
Porta Cruz, $\frac{1}{2}$ mile southwest of, 60 feet south of junction of road to Julian, etc., with road to Adobe Cabin corral; oak tree $2\frac{1}{2}$ feet in diameter, nail in root of	2, 839. 39
Warner's ranch, $\frac{1}{2}$ mile northeast of Adobe Cabin corral, 150 feet southeast of intersection of road from Temecula to Julian with road from ranch house to corral and Smith Mountain; cottonwood tree $2\frac{1}{2}$ feet in diameter, nail in butt of	2, 772. 47
Warner's ranch, $\frac{1}{2}$ mile northeast of Adobe Cabin corral; in southeast corner of intersection of road from ranch house to corral with Temecula-Julian road; iron post, marked "2772 T"	2, 772. 633
WARNER'S RANCH, VIA SAN LUIS REY CANYON AND POTRERO INDIAN RESERVATION, TO PAUMA GRANT.	
Warner's ranch, 60 feet southwest of Adobe Cabin corral, at right side of road, 75 feet from water hole; willow tree 3 feet in diameter, nail in butt of	2, 744. 34
Warner's ranch, $1\frac{1}{2}$ miles southwest of Adobe Cabin corral, at foot of hill near dry lake bed, at left of road; granite boulder 5 by $2\frac{1}{2}$ by 2 feet, top of	2, 701. 38
San Luis Rey River, bed of, in dry wash, at junction with road to north west	2, 661
San Luis Rey River, about 210 feet west of crossing; 50 feet left of road; triple butt willow tree, nail in root of	2, 669. 53
Smith Mountain, at foot of grade over southeast point of; 40 feet north of road, on west side of dry arroyo; granite boulder 4 by 2 by $1\frac{1}{2}$ feet, point on top of	2, 655. 68
San Luis Rey Canyon, head of; 45 feet west of road above foot of grade in first bend of Smith Mountain; iron post, marked "2724 T"	2, 723. 928
San Luis Rey River, bed of; near fence at west line of Warner's ranch	2, 616
San Luis Rey Canyon, 1 mile from head of; at old dam site, on right bank of river; double oak tree, nail in butt of	2, 597. 55
San Luis Rey Canyon, 2 miles from head of; on left bank of river, at end of old stone dam, 60 feet from cataract; embedded granite boulder 6 by $3\frac{1}{2}$ by 1 foot, point on top of	2, 552. 21
San Luis Rey Canyon, $2\frac{1}{2}$ miles from head of; on left bank of river, at trail crossing where it again comes into canyon; boulder 3 by 10 by $4\frac{1}{2}$ feet, top of	2, 498. 20
San Luis Rey Canyon, $3\frac{1}{2}$ miles below head of; 30 feet left of river near west end of bar, 10 feet left of trail; stone 10 by 4 by 1 foot, top of ..	2, 465. 65

	Feet.
Amago post-office, $3\frac{1}{2}$ miles southeast of; in San Luis Rey Canyon, 75 feet above trail crossing, on south side of stream, at junction of dry creek bed from south with San Luis Rey River; granite ledge $4\frac{1}{2}$ feet above bed of river, on top of	2,401.59
Amago post-office, $3\frac{1}{2}$ miles southeast of; at east side of trail in San Luis Ray Canyon, south side of creek, 100 feet west of junction of dry creek bed from south with San Luis Rey River, on west side of granite ledge; bronze tablet, marked "2404 T"	2,403.994
Amago post-office, $2\frac{1}{2}$ miles southeast of; 10 feet right of trail in San Luis Rey Canyon, at foot of double sycamore tree; granite boulder $2\frac{1}{2}$ by 3 by 2 feet, point on top of	2,326
Amago post-office, $1\frac{1}{2}$ miles southeast of; north side of San Luis Rey Cayon, 5 feet right of trail where it leaves canyon and runs up hill to Lajolla Indian Reservation; granite boulder 6 by 10 by 5 feet, point on top of	2,233.45
Amago post-office, in La Jolla Indian Reservation; 60 feet west of summit of hill in road; stone $1\frac{1}{2}$ by $3\frac{1}{2}$ by $3\frac{1}{2}$ feet, point on top of	2,799.20
Lajolla, Indian Reservation schoolhouse; 25 feet west of southwest corner of; oak tree $2\frac{1}{2}$ feet in diameter, nail in root of	2,715.91
Lajolla, Indian Reservation school house; at southwest corner of; iron post, marked "2719 T"	2,719.077
Lajolla schoolhouse, $1\frac{1}{2}$ miles west of; on south side of road, at junction with road up Smith Mountain to Nellie post-office, west side of creek; granite boulder $2\frac{1}{2}$ by 6 by 6 feet, on top of	2,977.91
Potrero Indian Reservation, 3 miles west of Lajolla schoolhouse; 10 feet west of road, 70 feet south of end of lane to northeast; granite boulder 2 by 2 by 3 feet, point on top of	2,540.86
Sparkman's store, $2\frac{1}{2}$ miles northeast of; on east side of dry canyon, north side of road; granite boulder 1 by 2 by 3 feet, point on top of	1,927.45
Sparkman's store, $1\frac{1}{2}$ miles northeast of; west side of road; granite boulder 1 by $2\frac{1}{2}$ by 4 feet, point on top of	1,473.32
Sparkman's store, $\frac{1}{2}$ mile east of; on east side of road, at junction of road from Lajolla to Pala with road to Escondido, north bank of dry wash; green shell of burned sycamore tree 7 feet in diameter, nail in butt of	1,150.77
Sparkman's store, 125 feet northwest of; north side of road; double butt sycamore tree, butts 10 inches in diameter, nail in saddle of	1,015.75
Sparkman's store, 45 feet northwest of; 2 feet northeast of stone fence on southwest side of road; iron post, marked "1016 T"	1,015.922
Sparkman's store, about $1\frac{1}{2}$ miles northwest of; 80 feet west of road, about midway between road and bank of old river channel; broken-top elder tree 2 feet in diameter, nail in butt of	803.95
Sparkman's store, $2\frac{1}{4}$ miles northwest of; at north side of road; granite bowlder 1 by 2 by 2 feet, point on top of	889.32
Sparkman's store, $3\frac{1}{2}$ miles northwest of; 15 feet west of road; granite boulder $1\frac{1}{2}$ by $2\frac{1}{2}$ by 3 feet, point on top of	830.64
Pauma ranch, southeast of fork of road to ranch house; iron post, marked "758 T"	758.008

SPARKMAN'S STORE VIA RINCON TO T. 11 S., R. 1 W., SAN BERNARDINO
MERIDIAN.

Sparkman's store, 125 feet northwest of; north side of road; double sycamore tree, nail in forks of	1,015.75
Rincon schoolhouse, at gate in front of; ground	974

Feet.

Rincon schoolhouse, $1\frac{1}{2}$ miles south from; 150 feet west of road crossing of San Luis Rey River; granite boulder 5 by 7 by 6 feet at point of rock ledge, point on top of	861.16
Rincon schoolhouse, $1\frac{1}{4}$ miles south of; about $\frac{1}{2}$ mile south of crossing of San Luis Rey River, 25 feet west of road, at junction of road to Escondido with road up creek; granite boulder 6 by 6 by 12 feet, largest of pile, point on top of	947.52
Rincon schoolhouse, $1\frac{1}{2}$ miles south of; about $\frac{1}{2}$ mile south of San Luis Rey River crossing, at junction of road to Escondido with road up creek; iron post, marked "939 T"	938.883

ADOBE CABIN CORRAL TO AGUA CALIENTE.

Adobe Cabin corral, $1\frac{1}{2}$ miles southeast of; 30 feet east of road where road from Temecula to Warner crosses wash of Agua Caliente Creek; a crooked cottonwood tree 4 feet in diameter, nail in horizontal part of	2,808.49
Agua Caliente, about 2 miles west of; 20 feet east of road where road from Temecula to Agua Caliente crosses Agua Caliente Creek wash; reclining cottonwood tree 2 feet in diameter, nail in butt of	2,888.69
Agua Caliente schoolhouse, 115 feet south of; about 80 feet north of creek; granite boulder 2 by 3 by 5 feet, point on top of	3,163.75
Agua Caliente schoolhouse, southwest corner of; iron post, marked "3165 T"	3,164.934

AGUA CALIENTE TO WARNER.

Agua Caliente, about 1 mile south of; at junction with road to west; ground	3,068
Agua Caliente, $1\frac{1}{4}$ miles south of; 15 feet west of road on south bank of Cañada Verde; oak tree 20 inches in diameter, nail in horizontal limb of	3,069.76
Agua Caliente, $2\frac{1}{2}$ miles southeast of; 10 feet south of road, on west side of small ridge; white boulder 1 by $1\frac{1}{2}$ by 3 feet, point on top of	3,163.75
Summit of divide; ground, in road	3,541
Agua Caliente, about $3\frac{1}{4}$ miles southeast of; 200 feet south of summit of divide, at junction with road to San Ignacio; 45 feet east of road; boulder 1 by 2 by 3 feet, point on	3,534.79
Warner schoolhouse, about $3\frac{1}{4}$ miles north of; T. 10 S., R. 3 E., sec. 30, about 500 feet east of road, and 350 feet east of southwest corner of, on township line; granite boulder 4 by 6 by 8 feet, point on top of	3,476.88
Warner schoolhouse, about $3\frac{1}{4}$ miles north of; T. 10 S., R. 3 E.; 150 feet east of road and 5 feet east of southwest corner of; iron post, marked "3459 T"	3,458.982
Warner schoolhouse, $1\frac{1}{2}$ miles northeast of; 110 feet west of road at point of ridge; embedded granite boulder 6 by 18 by 18 inches, point on top of	3,290.04
Warner schoolhouse, about $\frac{3}{4}$ mile northeast of; 45 feet west of road, about midway between junction with road to San Ignacio and road to Fort Yuma; elder tree 1 foot in diameter, nail in butt of	3,176.71
Warner schoolhouse, 1 mile east of; 50 feet north of road at junction of old Fort Yuma road with road to Mines; at base of dead elder tree, nail in burned hub	3,237.34
Warner schoolhouse, 1 mile east of; 50 feet east of junction of old Fort Yuma road with road to east; iron post, marked "3240 T"	3,239.901

	Feet.
Warner schoolhouse, 500 feet west of; reclining willow tree 18 inches in diameter, at east end of row of trees, nail in butt of	3,095.79
Warner, 60 feet east of Wilson's store, 55 feet west of well; cottonwood tree 2 feet in diameter, nail in butt of	2,999.09

WARNER POST-OFFICE TO ADOBE CABIN CORRAL.

Warner ranch house, 80 feet southeast of; 50 feet south of southwest corner of barn; embedded granite boulder 18 inches in diameter, point on	2,897.83
Warner ranch house, in forks of road at southwest corner of; iron post, marked "2894 T"	2,893.981
Warner ranch house, $1\frac{1}{2}$ miles northwest of, 160 feet southeast of bridge at intersection of road from Mesa Grande to Agua Caliente with road from Warner to Temecula; cottonwood tree 2 feet in diameter, nail in root of	2,830.71
Warner ranch lake, about 155 feet north of; willow tree 3 feet in diameter, point on root of	2,782.67

HEAD OF SAN LUIS REY CANYON, VIA SANTA YSABEL, RAMONA, AND SAN PASQUAL, TO BERNARDO.

Mesa Grande grade, foot of; on north side of lane at east end; point on base of iron gate hinge at foot of post	2,701.69
Mesa Grande grade, 400 feet southwest of end of lane; iron post, marked "2719 T"	2,718.914
Carrizo Canyon, mouth of; 15 feet south of old wagon-road crossing, in sand wash; nail in butt of willow tree 2 feet in diameter	2,739.51
Warner ranch boundary line, about $\frac{1}{2}$ mile south of; east side of road; oak tree 4 feet in diameter, nail in butt of	2,869.64
T. 11 S., R. 3 E., sec. 32, near north side of; Santa Ysabel ranch boundary, 210 feet south of intersection with section line, 25 feet east of road; rock 1 by $1\frac{1}{2}$ by 2 feet, point on	3,005.82
T. 11 S., R. 3 E., sec. 32, north side of; Santa Ysabel ranch boundary line, 5 feet south of intersection with section line; iron post, marked "3015 T"	3,014.936
Summit between heads of Carrizo and Santa Ysabel creeks, 220 feet north of; 30 feet west of road; boulder 1 by 2 by 5 feet, point on top of	3,370.20
Balcon Canyon, at junction with Santa Ysabel Creek, 20 feet west of road, on south side of dry wash; nail in butt of sycamore tree 3 feet in diameter	3,132.69
Balcon Canyon, at junction with road to; iron post marked "3,123 T"	3,123.092
Santa Ysabel ranch house, near; 250 feet north of junction with road to Mesa Grande and west side of Mesa Grande road; embedded granite boulder 3 feet square, point on top of	2,974.30
Santa Ysabel, $\frac{3}{4}$ mile north of; on west side of road at top of small ridge; granite boulder 2 by 3 by 4 feet, point on top of	2,943.61
Santa Ysabel, at southwest corner of road forks, at base of telephone pole at corner of warehouse; nail in buried hub	2,988.01
Santa Ysabel, 180 feet west of road junction and south side of road; iron post, marked "2983 T"	2,982.984
Santa Ysabel, 1.1 miles west of; at corner of double water trough on south side of road; boulder 10 by 10 by 18 inches, point on top of	3,006.33
Witch Creek post-office, about $\frac{1}{2}$ mile east of; on bank of creek 125 feet west of crossing, at north edge of road; granite boulder 1 by 2 by 3 feet, point on top of	2,864.59

	Feet.
Witch Creek post-office, $\frac{1}{2}$ mile west of; 45 feet south of Santa Ysabel schoolhouse; porphyry boulder on fence line, point on top of	2,766.66
Santa Ysabel schoolhouse, in yard at north side of gate; iron post, marked "2764 T"	2,764.038
Santa Ysabel schoolhouse, $\frac{1}{2}$ mile southwest of; on east side of road, 75 feet north of junction with private road into Dye Valley; granite boulder 2 by 3 by 3 feet, point on top of	2,687.48
Summit of divide between Dye Valley and Ballena; ground in road	2,758
Ballena schoolhouse, 0.8 mile east of; on north side of road; granite boulder $2\frac{1}{2}$ by $4\frac{1}{2}$ by $5\frac{1}{2}$ feet, point on top of	2,546.72
Ballena schoolhouse, 60 feet south of the southwest corner of; granite boulder 1 by 1 by 3 feet, by side of two large granite boulders, point on top of	2,469.55
Ballena schoolhouse, 60 feet south of; in yard at east side of gate; iron post, marked "2470 T"	2,469.940
Summit of divide between Ballena and Hatfield Creek; ground in road	2,475
Ballena, about 1 mile west of, and about $\frac{1}{2}$ mile west of summit; 115 feet south of road on north side of private road; oak tree 2 feet in diameter, nail in butt of	2,393.05
Stage station, $\frac{1}{2}$ mile east of; south side of road; deal oak stub 2 feet in diameter on fence line, nail in butt of	1,987.92
Stage station, $\frac{1}{3}$ mile west of; 20 feet north of road; granite boulder $2\frac{1}{2}$ by 5 by 4 feet, point on top of	1,922.46
Stage station, $1\frac{1}{2}$ miles west of; 15 feet southeast of road, at foot of hill; embedded granite boulder 1 by 2 by 3 feet, point on top of	1,789.08
Mesa Grande, junction with road to; 10 feet north of road; oak tree $2\frac{1}{2}$ feet in diameter, nail in butt of	1,778.85
Mesa Grande, junction with road to, in forks; iron post, marked "1776 T"	1,776.029
Santa Maria Creek, on west bank of; at road crossing, 150 feet east of junction with road to north, on south side of road; cottonwood tree 3 feet in diameter, nail in butt of	1,472.07
Ramona, about $\frac{1}{2}$ mile east of; at summit of small divide; ground in road	1,539
Ramona town hall, east side of; 0.5 foot above step; aluminum tablet, marked "1440 T"	1,439.997
Ramona, $1\frac{1}{2}$ miles northwest of; 70 feet south side of road and 500 feet west of junction with road from Santa Maria school; granite boulder $2\frac{1}{2}$ by 6 by 11 feet, point on top of	1,502.94
Ramona, $2\frac{1}{2}$ miles northwest of; at left of road at junction with private road to north; oak stump, nail in root of	1,383.07
Ramona, 3.8 miles northwest of; 25 feet south of road, 45 feet northwest of small bridge; oak tree $2\frac{1}{2}$ feet in diameter, nail in butt of	1,157.14
Pamo grade, 225 feet west of junction with; at left of road; granite boulder $2\frac{1}{2}$ by $2\frac{1}{2}$ by 5 feet embedded in bank, point on	796.29
Pamo grade, $\frac{1}{2}$ mile south of junction with; west of road, in turntable; iron post, marked "789 T"	788.924
Pamo grade, 0.8 mile southeast of foot of; north side of road; small granite boulder at base of large boulder; 8 by 10 by 14 feet, point on top of	682.81
Pamo grade, 150 feet west of foot of; north side of road; willow tree 2 feet in diameter, nail in root of	461.51

	Feet.
East San Pasqual schoolhouse, $1\frac{1}{2}$ miles east of; at junction with road to San Pasqual, on east side of road; granite boulder $2\frac{1}{2}$ by $3\frac{1}{2}$ by 5 feet, point on top of	452.32
East San Pasqual schoolhouse, $\frac{3}{4}$ mile east of; southeast corner of junction with road to San Pasqual; corner fence post 3.8 feet above ground, nail in top of	432.85
East San Pasqual schoolhouse, 10 feet west of entrance to yard; buried at base of fence post, hub and tack.	408.47
East San Pasqual schoolhouse, 95 feet north of; in yard, 3 feet from fence at west side of gate; iron post, marked "410 T"	409.936
East San Pasqual schoolhouse, $1\frac{1}{2}$ miles west of; at right of road where it turns across San Pasqual Valley; willow tree 10 inches in diameter, nail in butt of	379.31
San Pasqual schoolhouse, 1 mile east of; at southeast end of wingwall on south side of culvert; post, nail in top of	377.62
San Pasqual schoolhouse, 360 feet east of; south side of road; boulder $1\frac{1}{2}$ by 5 by 5 feet, in pile of bowlders, point on top of	362.31
San Pasqual schoolhouse, in yard at east side of gate; iron post, marked "366 T"	366.091
San Pasqual schoolhouse, 1.8 miles southwest of; at junction of road to Bernardo, over hill, with road to Bernardo via river bed, at north side of road, at foot of fence post; hub and nail	338.52
Glenella schoolhouse, 300 feet southwest of; 20 feet east of road; granite boulder 1 by 3 by 4 feet, point on top of	359.03
Glenella schoolhouse, 80 feet southwest of; in yard; iron post, marked "381 T"	381.063
Bernardo, $\frac{3}{4}$ mile southeast of; point on north side of granite boulder 10 by 15 by 20 feet, $2\frac{1}{2}$ feet above ground.	307.99
Bernardo, 625 feet north of Bernardo River bridge, on west side of county road; iron post, marked "319 T"	319.283

JUNCTION OF MESA GRANDE ROAD WITH JULIAN-SAN DIEGO ROAD, TO
SPRING HILL SCHOOLHOUSE.

Spring Hill schoolhouse, $2\frac{1}{2}$ miles southwest of; on bank of creek at west of road; leaning oak tree 2 feet in diameter, nail in butt of	1,906.03
Spring Hill schoolhouse, 1 mile southwest of; on southeast side of road, about 200 feet southwest of junction with private road to south; granite boulder $3\frac{1}{2}$ by 5 by 10 feet, point on top of	2,142.92
Spring Hill schoolhouse, 85 feet southwest of; on east side of road; granite boulder 2 by 3 by 7 feet, point on top of	2,335.69
Spring Hill schoolhouse, 55 feet west of; in yard at south side of gate; iron post, marked "2340 T"	2,339.966

SANTA YSABEL, VIA COUNTY ROAD, TO JULIAN.

Santa Ysabel, 1 mile south of; at left of road, at first point of hill above foot of grade; granite boulder, on top of	3,148.77
Santa Ysabel, $2\frac{1}{2}$ miles southeast of; 40 feet west of small bridge; granite boulder, point on top of	3,349.36
Wynola, at northwest corner of road intersection; fence post, nail in top of	3,655.51
Wynola, at northeast corner of road intersection; iron post, marked "3654 T"	3,653.9

Feet.

Coleman Creek bridge, 0.4 mile south of; on east bank of creek and southwest corner of road junction; oak tree 3 feet in diameter, nail in butt of	3,624.73
Julian, 1.9 miles west of; 25 feet south of road; oak tree 4 feet in diameter, nail in root of	3,920.87
Julian, 1 $\frac{3}{4}$ miles west of; at southwest corner of junction with private road to south: iron post, marked "3948 T"	3,947.99
Julian, 1 mile west of; 70 feet south of junction with road to Eagle Peak; in narrow ledge of broken granite, embedded granite boulder 1 by 2 feet, point on top of	3,977.39
Julian, porch of Julian Mercantile Company's new store: at base of post at right of steps, on floor of	4,209.86
Julian high-school house, on south side of gate at entrance to yard; gate-post, nail in top of	4,221.63
Julian high-school house, in yard at north side of gate; iron post, marked "4219 T"	4,219.065

JULIAN, VIA COUNTY ROAD, TO OBERLIN SCHOOLHOUSE.

Oberlin schoolhouse, 0.9 mile south of; on right side of road, 200 feet east of summit of divide; oak tree 2 $\frac{1}{2}$ feet in diameter, in butt of	4,310.49
Summit of ridge, 100 feet south of junction with road to west; ground	4,197
Oberlin schoolhouse, at northwest corner of yard; fence post, nail in top of	4,129.35
Oberlin schoolhouse, in yard at north side of gate; iron post, marked "4132 T"	4,131.771

VAN DEVENTERS, VIA TRAIL AND MARTINEZ CANYON, TO WALTERS.

Van Deventers; north of house on a little knoll, 50 feet east of road; in a granite boulder 3 feet high, 8 by 4 feet: copper bolt, marked "4549 T"	4,548.866
Van Deventers, about 1 $\frac{1}{4}$ miles northeast of; granite boulder 14 inches high, 3 by 3 feet, at left of road, point on	4,387.61
Van Deventers, about 3 miles northeast of; on summit of small ridge, 10 feet south of road: granite boulder 6 by 6 by 18 inches, point on top of	4,094.75
Van Deventers, about 4 miles northeast of; at southeast side of road in canyon; schist dike 1 foot high, point on top of	3,956.81
Van Deventers, about 4 miles northeast of; 3 feet north of north bank of sand wash, 165 feet southwest of point where trail to Martinez leaves wash; in face of white ledge 2 $\frac{1}{2}$ by 3 by 2 $\frac{1}{2}$ feet; bronze tablet, marked "3871 T"	3,871.054
Ridge, summit of; ground in trail	3,919
Van Deventers, 4 $\frac{1}{4}$ miles northeast of; 50 feet south of forks of dry wash where trail to Martinez Canyon leaves trail to Indio; rock at south side of wash, point on ledge of	3,819.80
Deep Canyon, 3.1 miles west of; in flat, about 275 feet south of where wash opens out; pine tree 2 feet in diameter, nail in butt of	3,996.57
Deep Canyon, 1.95 miles west of; on summit of first ridge west of white hill called Isinglass Hill, 50 feet south of trail; pinon tree 1 foot in diameter, nail in butt of	3,994.80
Deep Canyon, 1 $\frac{1}{2}$ miles west of; on summit of ridge, at south side of trail; red bush, nail in butt of	3,897.45
Deep Canyon, 0.57 miles west of; at south side of trail, on top of first small summit east of first water west of Deep Canyon; granite boulder 3 $\frac{1}{2}$ by 4 by 1 foot, point on top of	3,641.93

	Feet.
Deep Canyon, on top of west rim: granite boulder 1.5 by 5 by 6 feet, point on top of	3, 489.98
Deep Canyon, 40 feet west of edge of west bluff; 15 feet north of trail, in top of granite boulder 4.5 by 5 by 3 feet; bronze tablet, marked "3492 T"	3, 492.106
Deep Canyon, 1.1 miles east of; in forks of wash where trail turns to southeast: pinon tree 1.5 feet in diameter, nail in butt of	3, 995.62
Little Pinon Spring, 75 feet southeast of; on east bank of wash; wild lilac tree 6 inches in diameter, nail in butt of	4, 209.39
Little Pinon Spring, 1 mile southeast of; ledge at south side of wash, on point of	4, 473.25
Summit of divide between Deep Canyon and Martinez Creek, $\frac{1}{2}$ mile north of; in gorge near mouth, at foot of steep slope south of wash; ledge, point on	4, 837.09
Summit of divide between Deep Canyon and Martinez Canyon; east side of trail: granite boulder, point on top of	5, 164.78
Summit of divide between Deep and Martinez canyons; 25 feet northeast of trail, in southeast face of granite boulder 4 by 5 by 6 feet; bronze tablet, marked "5168 T"	5, 168.032
Summit of divide between Deep Canyon and Martinez Canyon, 1.3 miles southeast of; in forks of wash; granite boulder 2.5 by 5 by 8 feet, point on top of	4, 506.37
Agua Alta Spring, about 235 feet southwest of; on summit ridge, 40 feet south of trail; granite boulder 2 by 3.5 by 5 feet, point on top of ..	4, 280.88
Agua Alta Spring, 235 feet southwest of; on northeast side of trail, 70 feet northwest of sand wash, on northwest side of granite boulder 3.5 by 5 by 6 feet; bronze tablet, marked "4282 T"	4, 281.823
Agua Alta Spring, about $1\frac{1}{2}$ miles southeast of; about 75 feet south of summit, 15 feet east of trail on north rim of basin; granite boulder 1 by 3 by 4 feet, point on top of	3, 983.10
Martinez Canyon, $1\frac{1}{2}$ miles northwest of junction with Casa de Taquitz Canyon; 55 feet southeast of summit of spur, west side of trail; granite boulder 4 by 5 by 5.5 feet, point on top of	3, 837.81
Martinez Canyon, south side of; opposite mouth of Casa de Taquitz Canyon; flat granite boulder 2 by 8 by 9 feet, point on top of	2, 537.07
Martinez Canyon, south side of; opposite mouth of Casa de Taquitz Canyon, 420 feet from foot of steep grade of trail, in top of flat granite boulder 2 by 8 by 9 feet; bronze tablet, marked "2537 T"	2, 536.578
Martinez Canyon, 0.9 mile below mouth of Casa de Taquitz Canyon, north side of wash, 15 feet north of trail; granite boulder 6 by 4 by 4.5 feet, point on top of	2, 277.49
Martinez Canyon, $1\frac{1}{2}$ miles below mouth of Casa de Taquitz Canyon; in middle of wash, 30 feet south of trail; granite boulder 5 by 10 by 18 feet, point on top of	1, 959.59
Martinez Canyon, 270 feet below junction with Black Canyon; in face of granite cliff on south side of wash; bronze tablet, marked "1584 T" ..	1, 584.003
Martinez Canyon, $1\frac{1}{2}$ miles below Black Canyon; near middle of wash; granite boulder 3 by 7 by 5 feet, point on top of	1, 264.77
Martinez Canyon, $2\frac{1}{2}$ miles east of junction with Black Canyon; in sand wash, about 200 feet east of junction with large sand wash from northwest; granite boulder 4 by 5 by 6 feet, point on top of	957.28
Martinez Canyon, $3\frac{1}{2}$ miles east of junction with Black Canyon; in sand wash; granite boulder $\frac{1}{2}$ by 3 by 3 feet, point on top of	700.51
Martinez Indian school, 5 miles southwest of; 60 feet south of granite bluff, in sand wash; granite boulder 1 by 1 by 1.5 feet, point on top of ..	647.50

	Feet.
Martinez Canyon, north side of; at mouth, 5 miles southwest of Martinez Indian school, in face of granite cliff 4 feet above ground; bronze tablet, marked "655 T"	655.041
Martinez Indian school, $4\frac{1}{8}$ miles southwest of; in wash; granite boulder 1 by 2 by 2.5 feet, point on top of	466.08
Martinez Indian school, $3\frac{1}{4}$ miles southwest of; in middle of wash; granite boulder 2 by 2 by 3 feet, point on top of	260
Martinez Indian school, 2.2 miles southwest of; at east side of sand wash; granite boulder 1 by 2 by 2 feet, point on top of	72.05
Martinez Indian school; point on rock on top of northeast corner of stone foundation (below sea level)	-133.75
Martinez Indian school, 40 feet southeast of; at northeast side of entrance to yard; iron post, marked "135 T" (below sea level)	-134.914
Martinez Indian school, 0.9 mile east of; south side of road; mesquite tree 8 inches in diameter, nail in butt of	-167
Martinez Indian school, about 1.7 miles east of; 25 feet north of road; mesquite stump 1 foot in diameter, nail in butt off	-185.11
Martinez Indian school, 3.1 miles east of, 10 feet north of road; nail in butt of mesquite stump	-191.73
Walters, 0.36 miles west of, 50 feet north of road, at junction of roads from Walters and Martinez and to Fish Springs; forked mesquite stump 1 foot in diameter, nail in	-191.18
Walters, under water tank, point on inside of cement base to northwest post	-190.56

WALTERS, VIA SOUTHERN PACIFIC RAILROAD, TO PALM SPRINGS.

Walters, 27 feet northwest of station, in corner of yard; iron post, marked - "189 T" (below sea level)	-189.167
Walters, 0.9 mile northwest of, 40 feet southwest of track; milepost 624, spike in base of	-185.87
Walters, 1.89 miles northwest of, 40 feet southwest of track; milepost 623, spike in base of	-173.76
Walters, $2\frac{7}{8}$ miles northwest of, 40 feet southwest of track; milepost 622, railroad spike in base of	-158.47
Thermal, $2\frac{1}{8}$ miles southeast of, 45 feet southwest of track, 20 feet northeast of wagon road; mile post 621, railroad spike in base of	-147.97
Trestle A, top of rail in center of	-144
Thermal, $1\frac{1}{8}$ miles southeast of, 45 feet southwest of track; milepost 620, railroad spike in base of	-137.67
Trestle B, top of rail in center of	-132
Trestle A (covered with rock), top of rail in center	-128
Thermal, 245 feet southeast of switch at southeast end of siding, 45 feet southwest of track; milepost 619, railroad spike in base of	-125.02
Thermal, 300 feet northwest of signboard, 45 feet southwest of track; telegraph pole, railroad spike in base of	-121.89
Thermal, about 300 feet northwest of signboard, 45 feet southwest of track, 5 feet northwest of telegraph pole; iron post, marked - "121 T" (below sea level)	-120.923
Thermal, $1\frac{3}{4}$ miles northwest of, 45 feet southwest of track; milepost 617, railroad spike in base of	- 97.92
Wood spur, 1 mile southeast of, 45 feet southwest of track; milepost 616, railroad spike in base of	- 83.01
Wood spur, 100 feet northwest of switch stand, 45 feet southwest of track; milepost 615, railroad spike in base of	- 65.15

	Feet.
Wood spur, 50 feet southwest of track, at road crossing; iron post, marked —“66 T” (below sea level)	— 66.124
Wood spur, 1 mile northwest of, 45 feet southwest of track; milepost 614, railroad spike in base of	— 49.01
Indio, 1.37 miles southeast of, 45 feet southwest of track; 210 feet northwest of milepost 613; telegraph pole, spike in base of	— 33.98
Trestle B, top of rail	— 33
Indio, 115 feet northwest of hotel, northeast side of track, at southeast corner of foundation under water tank; iron bolt on southeast side of base.	— 14.93
Indio, in southeast corner of schoolhouse yard; iron post, marked —“15 T” (below sea level)	— 14.959
Indio, 1½ miles northwest of, 35 feet southwest of track, 20 feet southeast of wagon road, 15 feet northeast of fence corner near railroad crossing; telegraph pole, spike in base of	— 2.16
Indio, 2.6 miles northwest of, 45 feet southwest of track; milepost 609, spike in base of	28.01
Indio, 3.6 miles northwest of, 45 feet southwest of track; milepost 608, spike in base of	47.04
Myoma Siding, 100 feet west of switch at west end of, 45 feet southwest of track; iron post, marked “70 T” (below sea level)	69.982
Myoma Siding, about 350 feet west of northwest end of switch, 45 feet southwest of track; milepost 607, spike in base of	70.88
Myoma, 1¼ miles northwest of; milepost 606, spike in base of	101.57
Myoma, 2½ miles northwest of, 45 feet southwest of track; milepost 605, spike in base of	123.82
Dry Camp, 1.8 miles southeast of; milepost 604, spike in base of	150.74
Dry Camp, 0.8 mile southeast of, 45 feet southwest of track; milepost 603, spike in base of	159.77
Dry Camp, 0.2 mile northwest of, 45 feet southwest of track; milepost 602, spike in base of	164.61
Dry Camp, 45 feet southwest of track, 90 feet west of switch at northwest end of siding; iron post, marked “164 T” (below sea level)	163.875
Dry Camp, 1.2 miles northwest of, about 45 feet southwest of track; milepost 601, spike in base of	181.69
Dry Camp, 2.2 mile northwest of, 45 feet southwest of track; milepost 600, spike in base of	206.74
Dry Camp, 3.2 miles northwest of, about 45 feet southwest of track; milepost 599, spike in base of	226.75
Rimlon, 2½ miles southeast of, 45 feet southwest of track at switch stand at Eugene Spur; milepost 598, spike in base of	260.48
Rimlon, 1½ miles southeast of, about 45 feet southwest of track; milepost 597, bolt in base of	297.67
Rimlon, 0.16 mile southeast of signboard, about 45 feet southwest of track; milepost 596, spike in base of	340.78
Rimlon, 0.16 mile southeast of signboard at section house, 45 feet southwest of track, near milepost 596; iron post, marked “342 T” (below sea level)	342.126
Rimlon, 0.84 mile northwest of, about 45 feet southwest of track; milepost 595, spike in base of	381.59
Rimlon, 1.84 miles northwest of, about 45 feet southwest of track; milepost 594, spike in base of	435.56
Rimlon, 2.84 miles northwest of, about 45 feet southwest of track; milepost 593, spike in base of	495.43

	Feet.
Trestle 592 A, top of rail	508
Palm Springs, $3\frac{1}{5}$ miles southeast of, about 45 feet southwest of track; milepost 592, spike in base of	538.42
Palm Springs, $3\frac{1}{5}$ miles southeast of, 45 feet southwest of track, 4 feet northwest of milepost 592; ironpost, marked "539 T" (below sea level)	539.071
Trestle 591 A, top of rail	556
Palm Springs, $2\frac{1}{5}$ miles southeast of station, about 45 feet southwest of track; milepost 591, spike in base of	580.74
Open culvert 590 B, top of rail over	598
Palm Springs, $1\frac{1}{5}$ miles southeast of, about 45 feet southwest of track; milepost 590, spike in base of	599.74
Palm Springs, 280 feet southeast of, 30 feet northeast of track; granite boulder 6 inches by 1.5 by 2 feet, point on top of	682.01
Palm Springs, about 170 feet east of station, at east end of row of palm trees, 13 feet south of track; iron post, marked "685 T" (below sea level)	685.34
Palm Springs, 0.86 mile south of, 70 feet east of road; granite boulder 1 by 2 by 3 feet, point on top of	640.05
Palm Springs, 2 miles south of, 30 feet east of road; granite boulder 6 by 10 by 16 inches, point on top of	614.92
Palm Springs, $1\frac{1}{2}$ miles north of, at junction with road to Whitewater, west of road; brace post to telephone pole, nail in	560.38
Palm Springs, in south concrete wall of hotel; bronze tablet, marked "455 T" (below sea level)	455.133

MARTINEZ INDIAN SCHOOL, VIA TOROS INDIAN VILLAGE, TO INDIO.

Martinez Church, floor of porch	-140
Martinez, 1.4 miles west of, 25 feet south of road; mesquite stump 2 feet in diameter, nail in butt of	-135.78
Martinez, 2.5 miles northwest of, in alkali flat, 15 feet south of road; reclining dead mesquite tree 1 foot in diameter, nail in butt of	-126.15
Toros Indian Village, 0.8 miles east of, 25 feet south of road where it enters mesquite thicket; mesquite stump 8 inches in diameter, nail in top of	-122.41
Toros Indian Village, north side of, in northeast angle of intersection of road north to Indio with road east and west; iron post, marked— "111 T" (below sea level)	-110.922
Toros Indian Village, 550 feet west of junction of closed road running north through village with main road running east and west, in side field, 30 feet south of road; mesquite stump 1 foot in diameter, nail in	-108.12
Toros, 1.5 miles northwest of, at east side of road; mesquite stump, nail in butt of	-90.82
Toros, $3\frac{1}{2}$ miles north of, 40 feet west of road; dead mesquite tree 2 feet in diameter, nail in butt of	-73.18
Frazey's artesian well, top of pipe	-71.2
Indio, $5\frac{1}{5}$ miles south of, 60 feet east of road; nail in butt of dead mes- quite tree 5 inches in diameter	-66.81
Indio, 4.7 miles south of; T. 6 S., R. 7 E., sec. 12, 5 feet northwest of $\frac{1}{4}$ corner, south side of; hub and nail	-63.79
Indio, 4.7 miles south of; T. 5 S., R. 7 E., sec. 12, at $\frac{1}{4}$ corner south side of; iron post, marked "—62 T", (below sea level)	-61.925
Indio, 3.8 miles south of; T. 6 S., R. 7 E., sec. 1, 5 feet northeast of $\frac{1}{4}$ cor- ner south side of; nail in top of stake	-53.81

	Feet.
Indio, $2\frac{3}{4}$ miles south of; T. 5 S., R. 7 E., sec. 36, about 50 feet east of wagon road, at $\frac{1}{4}$ corner south side of.....	-38.72
INDIO, VIA INDIAN WELL, TO PALM SPRINGS.	
Indio schoolhouse, floor of porch	-14
Indio, $1\frac{1}{2}$ miles west of; T. 5 S., R. 7 E., sec. 23, about 25 feet north of $\frac{1}{4}$ corner south side of; post 5 feet high, nail in top of.....	+5.45
Indio, 3.5 miles west of; 45 feet north of road; willow tree 5 feet in diameter, nail in butt of	47.36
Indian Well, 1.3 miles east of; 30 feet north of road and 90 feet west of junction with road to Toros and Martinez, about 500 feet east of rock bluff; granite boulder 2 by 2 by 4 feet, point on top of.....	79.90
Indian Well, at southwest corner of curb; granite boulder 4 by 10 by 18 inches, point on top of	96.27
Indian Well, 70 feet south of; iron post, marked "97 T"	96.974
Indian Well, 2.05 miles northwest of; 10 feet south of road in mesquite thicket; mesquite tree 6 inches in diameter, nail in butt of	147.31
Indian Well, 3 miles northwest of; 10 feet south of road; hub and nail ..	166.13
Indian Well, 3.9 miles northwest of; 15 feet south of road; hub and nail ..	179.03
Indian Well, 3.9 miles northwest of; 6 feet south of road; iron post, marked "181 T"	180.809
Indian Well, 4.7 miles northwest of; 15 feet south of road; hub and nail ..	187.05
Indian Well, 5.6 miles northwest of; 15 feet south of road; hub and nail ..	202.88
Indian Well, 6.6 miles northwest of; 6 feet south of road, 5 feet south-west of bush; hub and nail	229.53
Indian Well, $7\frac{1}{8}$ miles northwest of; 20 feet south of road at point of spur of mountain; granite boulder 1.5 by 2 by 2.5 feet, point on top of....	230.95
Indian Well, $7\frac{1}{8}$ miles northwest of; 7 feet north of road and 25 feet north of spur of mountain; iron post, marked "230 T"	230.037
Palm Springs, $7\frac{1}{2}$ miles southeast of; on southeast side of point of rocky hill, 50 feet south of road; granite boulder 2 by 2 by 2 feet, point on top of	260.80
Palm Springs, 6.58 miles southeast of; where wash runs against point of hill, 60 feet south of road; granite ledge 3 feet high, point on top of ..	279.24
Palm Springs, $5\frac{1}{4}$ miles southeast of; 35 feet south of road; granite ledge at point of hill, point on	303.86
Palm Springs, 4.37 miles southeast of; 65 feet south of road; granite boulder 1.5 by 2 by 4 feet, point on top of.....	324.42
Palm Springs, $4\frac{1}{8}$ miles southeast of; 12 feet south of road, at point of mountain; iron post, marked "323 T"	322.954

WALTERS, VIA SOUTHERN PACIFIC RAILROAD, TO MORTMERE.

Culvert A, at south end of Walters Siding, top of rail.....	-192
Trestle C, top of rail	-195
Trestle D, top of rail	-197
Walters, $1\frac{1}{2}$ miles southeast of; milepost 626, spike in base of	-203.83
Trestle A, top of rail	-203
Walters, $2\frac{3}{8}$ miles southeast of; 45 feet southwest of track; milepost 627, spike in base of	-214.94
Trestle B, top of rail.....	-214
Mortmere, 2.54 miles northwest of; 45 feet southwest of track, 5 feet northeast of wagon road; milepost 628, spike in base of.....	-225.66

	Feet.
Trestle A, top of rail	-225
Trestle C, top of rail	-229
Trestle E, top of rail	-230
Trestle F, top of rail	-231
Mortimere, 1.5 miles northwest of; 45 feet southwest of track, 7 feet northeast of wagon road; milepost 629, spike in base of	-235.81
Trestle 629 B, top of rail	-239
Trestle C, top of rail	-239
Trestle D, top of rail	-240
Trestle E, top of rail	-241
Mortimere, 0.49 mile northwest of; 45 feet southwest of track; milepost 630, spike in base of	-245.79
Trestle A, top of rail	-243
Trestle B, top of rail	-244
Mortimere, 45 feet southwest of; frog at northwest end of siding; tele- graph pole, spike in base of	-249.43
Mortimere, 100 feet southeast of; switch stand at west end of siding, 45 feet south of track, 4 feet south of wagon road, 4 feet west of tele- graph pole; iron post, marked "-248 T" (below sea level)	-248.087

WALTERS, VIA WAGON ROAD, TO BOREGO SPRINGS.

Walters, about 1½ miles southwest of; 150 feet southeast of road, at side of small and 100 feet southwest of large mesquite tree; mesquite stump, nail in butt of	-203.37
Intersection with road northwest and southeast and junction with road to southwest	-206
Walters, about 3.5 miles southwest of; 50 feet southwest of road; mes- quite stump 1.5 feet in diameter, nail in top of	-200.34
Alamo Bonito, about 260 feet south of; water hole 155 feet northeast of road at junction with road to Martinez and road to southwest; at south side of small cluster of palm trees; willow tree 16 inches in diameter, nail in butt of	-184.77
Alamo Bonito, at last water hole on south side, 6 feet east of road, at junction with road to Martinez; mesquite tree 8 inches in diameter, nail in butt of	-186.01
Alamo Bonito, near water hole south side of, in triangle between roads; iron post, marked "-186 T" (below sea level)	-186.027
Alamo Bonito, 1 mile southeast of, 3 feet east of road; small mesquite stump at surface of ground, nail in top of	-194.08
Alamo Bonito, 1¼ miles southeast of, 3 feet west of road, 115 feet north of junction with road to southeast; butt of recumbent mesquite tree 7 inches in diameter	-199.64
Agua Dulce, 3 feet west of road, just east of spring and garden at north end of Indian settlement; mesquite stump 1 foot in diameter, nail in ..	-182.74
Agua Dulce, at north end of Indian Village, about 300 feet south of spring and garden, in road forks; iron post, marked "-183 T" (below sea level)	-183.112
"Fig Tree" John's, 3 miles northwest of, 15 feet east of road; mesquite stump 8 inches in diameter, nail in top of	-201.20
"Fig Tree" John's, 1.6 miles northwest of, 45 feet east of road; dead mesquite tree 1.2 foot in diameter, nail in top of	-178.47
"Fig Tree" John's, 140 feet southwest of reservoir at spring, southwest side of road; mesquite stump 1 foot in diameter, nail in top of	-196.22

	Feet.
"Fig Tree" John's, 140 feet southwest of reservoir at spring, 5 feet west of road, opposite fence corner; iron post, marked "-196 T" (below sea level)	-197.076
"Fig Tree" John's, $\frac{3}{4}$ mile southeast of, 30 feet northeast of road; dead mesquite tree 1 foot in diameter, nail in butt of	-210.89
Fish Spring, 420 feet south of, 150 feet east of road; mesquite tree 6 inches in diameter, nail in butt of	-224.99
Fish Spring, $1\frac{1}{2}$ miles south of, about 100 feet east of road; tree 5 inches in diameter, nail in butt of	-232.87
Fish Spring, $1\frac{1}{4}$ miles south of, 6 feet east of road; iron post, marked "-233 T" (below sea level)	-233.004
Fish Spring, $2\frac{1}{2}$ miles south of, 40 feet west of road; stub desert tree 6 inches in diameter, nail in butt of	-203.83
Fish Spring, $3\frac{1}{4}$ miles southeast of, 5 feet east of road; green-barked desert tree 8 inches in diameter, nail in butt of	-190.64
Fish Springs, $4\frac{1}{2}$ miles southeast of, 15 feet west of road; green-bark desert tree, 10 inches in diameter, nail in butt of	-174.01
Fish Spring, $4\frac{1}{2}$ miles southeast of, 7 feet east of road; iron post, marked "-175 T" (below sea level)	-174.942
Fish Spring, $5\frac{1}{2}$ miles southeast of, 10 feet west of road; granite boulder 6 inches by 1 by 10 feet, point on top of	-153.87
Fish Spring, 6 miles southeast of, in dry wash, 30 feet southeast of road; tree 6 inches in diameter, nail in butt of	-119.68
T. 10 S., R. 9 E., sec. 12, 900 feet northwest of center of, 5 feet east of road; granite boulder 1 by 1.5 by 2 feet, point on top of	-76.23
T. 10 S., R. 9 E., sec. 12, 145 feet northwest of $\frac{1}{4}$ corner south side of; 5 feet west of road, granite boulder 6 inches by 1.5 by 2 feet, point on top of	-41
T. 10 S., R. 9 E., sec. 12, $\frac{1}{4}$ corner south side of; iron post, marked "-39 T" (below sea level)	-38.954
Clay Point, $1\frac{1}{2}$ miles north of, 10 feet east of road; granite boulder 1 by 1.5 by 3 feet, point on top of	-25.92
Clay Point, $\frac{3}{4}$ mile north of, 70 feet east of road; white granite boulder 1.5 by 2 by 2.5 feet, point on top of	3.30
Clay Point, 15 feet east of road; boulder 1 by 1.5 by 2 feet, point on top of	36.02
Clay Point, in forks of road at junction with road to water holes; iron post, marked "36 T" (below sea level)	36.020
T. 10 S., R. 9 E., sec. 25, 450 feet northwest of southeast corner of, at south-east side of road; granite boulder 1 by 1.5 by 2 feet, point on top of ..	17.09
Clay Point, $2\frac{3}{4}$ miles southwest of, 20 feet south of road; small granite boulder 3 inches high, point on top of	41.49
T. 11 S., R. 9 E., sec. 10, northwest corner of; 0.4 mile east of where road running south through "Bad Lands" joins road running east and west down wash; small granite boulder 6 by 1 by 1.5 feet, point on top of ..	52.47
T. 11 S., R. 9 E., sec. 4, 300 feet northwest of southeast corner of, in wash; granite boulder 1 by 1 by 1.5 feet, point on top of ..	67.50
T. 11 S., R. 9 E., sec. 4, southeast corner of; iron post, marked "71 T" ..	71.078
T. 11 S., R. 9 E., sec. 4, 1 mile northwest of southeast corner of, south side of wash; granite boulder 6 by 1 by 1.5 feet, point on top of	105.06
Water holes, $\frac{3}{4}$ mile west of, on south side of wash, opposite and 170 feet from sandstone bluff about 50 feet high; granite boulder 6 inches by 1 by 2 feet, point on top of	158.09
Seventeen Pa'ms, $2\frac{1}{2}$ miles east of, in middle of wash; granite boulder 6 inches by 1.5 by 3 feet, point on top of	221.32

	Feet.
Seventeen Palms, $1\frac{1}{5}$ miles east of, in northeast side of wash; granite boulder 15 inches by 2 by 3 feet, point on top of.....	300.25
Seventeen Palms; triple-butt palm tree, nail in westerly butt of.....	408.81
Seventeen Palms, 165 feet south of chimney, on west side of road; iron post, marked "410 T".....	410.002
Seventeen Palms, $1\frac{1}{8}$ miles west of, in middle of large wash; granite boulder 6 inches high, point on top of.....	484.36
Seventeen Palms, $2\frac{1}{5}$ miles southwest of, at west side of wash; granite boulder 6 inches by 1 by 1.5 feet, point on top of.....	399.44
Seventeen Palms, $3\frac{1}{5}$ miles southwest of, 5 feet west of road; granite boulder 1 foot high, point on top of.....	366.82
Seventeen Palms, $3\frac{1}{5}$ miles southwest of, 8 feet east of road; iron post, marked "367 T".....	367.063
Seventeen Palms, $4\frac{1}{4}$ miles southwest of, 15 feet south of road; granite boulder 1 by 1.5 by 2 feet, point on top of.....	363.53
Seventeen Palms, 5.4 miles southwest of, south side of road; thorn bush called "Okatea," nail in root of.....	391.98
T. 11 S., R. 8 E., sec. 19, $\frac{1}{4}$ mile west of northeast corner of, 85 feet south of road; flat white boulder at surface of ground encircled with small rocks, point on top of.....	385.45
T. 11 S., R. 7 E., sec. 24, 225 feet southwest of northeast corner of, 25 feet north of road; boulder at surface of ground within circle of stones, point on top of.....	324.97
T. 11 S., R. 7 E., sec. 24, northeast corner of; iron post, marked "336 T".....	335.953
Borego Springs, 3.8 miles east of, north side of road; boulder 6 inches by 1 by 2 feet, on top of.....	343.28
Borego Springs, $2\frac{3}{8}$ miles east of, on south bank of dry wash; willow tree 1 foot in diameter, nail in butt of.....	383.61
Borego Springs, $1\frac{1}{8}$ miles east of, 4 feet south of road; small embedded boulder surrounded by circle of stones, point on top of.....	420.43
Borego Springs, about 75 feet south of, 20 feet north of old cabin, on side of hill; mesquite tree 15 inches in diameter, nail in butt of.....	452.74
Borego Springs, 60 feet south of, 25 feet north of cabin; iron post, marked "452 T".....	452.080

SAN BERNARDINO AND KERN COUNTIES.

RANDSBURG QUADRANGLE.

The elevations in the following list are based on the levels of the Randsburg Railway, the height of the top of the rail in front of the depot at Johannesburg being accepted as 3,545 feet above mean sea level.

The leveling was done under the direction of Mr. L. C. Fletcher, topographer, by Mr. C. C. Ward, levelman.

All bench marks depending on this datum are stamped with the letter "J" in addition to the figures of elevation.

JOHANNESBURG TO RANDSBURG.

	Feet.
Johannesburg, at southeast corner of bay window of station; nail in platform.....	3,545.31
Johannesburg, 25 feet northwest of platform of station, north side of track; iron post, marked "3544 J".....	3,544.007

	Feet.
Summit of divide between Johannesburg and Randsburg; ground....	3, 743
Randsburg, near schoolhouse; G. W. Lloyd's store, in northwest corner of porch of, nail	3, 601.65
Randsburg, 1.5 feet west of door of butcher shop (stone building), 1 foot above ground; bronze tablet, marked "3530 J"	3, 530.006
Randsburg, at northeast corner of post-office and express office (adobe building); boulder point on top of	3, 521.71

RANDSBURG TO GARDEN STATION.

Randsburg, on north side of Fiddlers Gulch, at junction with road to Garlock; boulder 6 by 12 by 22 inches, top of	3, 460.70
Randsburg, $1\frac{1}{8}$ miles north of, 25 feet north of road, 45 feet southwest of cabin; white quartz ledge, point on top of	3, 304.34
Randsburg, $2\frac{1}{2}$ miles northwest of, 120 feet west of intersection of roads; lava boulder 1 by 1.5 by 3 feet, top of	2, 969.41
Randsburg, $3\frac{3}{8}$ miles north of, at east side of road, 100 feet north of well in dry wash; boulder 2 by 2 by 2 feet, point on top of	2, 752.35
Randsburg, 5.1 miles north of, 25 feet northwest of junction of old "borax" road to Garlock, 20 feet northwest of road; iron post, marked "3010 J"	3, 010.177
Randsburg, $5\frac{1}{8}$ miles north of, at northwest side of road; point on top of boulder $\frac{1}{2}$ by 2 by 2.5 feet	3, 087.87
Garden station, 4 miles south of, at east side of road, at sharp bend around red point of hill; lava boulder $\frac{1}{2}$ by 1.5 by 2 feet, point on top of	3, 423.34
Garden station, $3\frac{1}{8}$ miles south of, at junction with road to Willow Springs; buried at foot of sage brush, peg	3, 485.79
Garden station, 400 feet south of, east side of road; large granite boulder on west side of pile of boulders, point on side of	3, 069.82
Garden station, 1 mile northeast of, T. 28 S., R. 41 E., sec. 18, Mount Diablo meridian; about 50 feet northwest of road, 4 feet east of northwest corner of; iron post, marked "3024 J"	3, 023.971

RANDSBURG AND GARDEN STATION ROAD TO SUMMIT OF DIVIDE SOUTH OF WILLOW SPRINGS.

Willow Springs, 0.6 mile southeast of summit of divide south of, at east side of road; boulder 1 by 1.5 by 1.5 feet, point on top of	3, 991.71
Willow Springs, at summit of divide south of, west of road; granite boulder, point on top of	4, 115.50
Willow Springs, at summit of divide south of, 15 feet west of road, 10 feet from granite boulder; iron post, marked "4116 J"	4, 116.022

GARDEN STATION, VIA SUMMIT DIGGINGS, TO JOHANNESBURG.

Garden station, $1\frac{3}{8}$ miles south of, 20 feet west of road; lava boulder 1 by 1 by 1 foot, point on top of	3, 303.08
Garden station, 2.6 miles southeast of, 250 feet south of divide, on east side of road, lava boulder 1 by 2 by 2.5 feet, point on top of	3, 425.97
Garden station, $3\frac{1}{8}$ miles southeast of, about 160 feet south of small divide, 30 feet west of road, at junction with road to west; boulder 2 by 2 by 2 feet, top of	3, 236.52
Little Dry Lake, $1\frac{1}{8}$ miles north of, on small divide, 30 feet west of road; lava boulder 1.5 by 2 by 3.5 feet, point on top of	3, 130.59
Little Dry Lake, 75 feet north of, 25 feet east of road; lava boulder 1 by 1.5 by 1.5 feet, point on top of	3, 209.14

	Feet.
Little Dry Lake, summit of divide at south end of, 30 feet east of road; iron post, marked "3220 J"	3,220.025
Little Dry Lake, about $\frac{3}{4}$ mile south of, east side of road; boulder 1 by 2 by 2.5 feet, point on top of	3,195.21
Johannesburg, 1.8 miles northeast of, 15 feet west of road, 160 feet south of junction with road to Mountain Wells and Cuddalock Lake; white quartz boulder 3.5 by 5 by 10 feet, point near ground on east end of ..	3,391.51
Johannesburg, $1\frac{1}{2}$ miles northeast of, 45 feet southeast of road; granite boulder 1 by 1.5 by 2 feet, point on top of	3,443.39

RANSBURG VIA BLACK HAWK MINE TO JOHANNESBURG.

Randsburg, $\frac{3}{4}$ mile southeast of; north of road on north side of Fiddlers Gulch; granite boulder 2 by 6 by 60 feet, point on top of	3,790.87
Summit of divide	3,887
Randsburg, $1\frac{1}{2}$ miles southeast of; near intersection of road from Johannesburg to Stringer; black rock, point on dike of	3,825.03
Randsburg, $2\frac{1}{4}$ miles southeast of; at junction with road from Johannesburg to Black Hawk mine; stone in road	3,663.01
Black Hawk mine, on ridge about 750 feet north of; 30 feet north of road and 50 feet from junction with road to Stringer; iron post, marked "3706 J"	3,706.028
Johannesburg, 2 miles southeast of; on east side of road, 160 feet south of junction with road to St. Elmo; top of broken telegraph pole	3,592.86

JOHANNESBURG EAST VIA SKILLINGS WELLS ROAD.

Johannesburg, $3\frac{3}{4}$ miles northeast of; at left of road at junction with road to Mountain Wells; boulder, point on top of	3,250.28
Johannesburg, 4.4 miles east of; on summit divide 20 feet west of road; iron post, marked "3326 J"	3,326.071
Johannesburg, 4.7 miles east of; 0.3 mile east of summit of divide, in bottom of drainage; at north of road, point on dike	3,284.45
Johannesburg, 5.7 miles east of; south side of road; red boulder 2 by 2.5 by 3 feet, point on top of	3,152.19
Johannesburg, 7.1 miles east of; 25 feet east of road where canyon opens out into desert; black boulder 2.5 by 4 by 4 feet, point on top of ..	2,917.91
Johannesburg, 7.4 miles east of; 20 feet northeast of road; red boulder 1.5 by 2 by 3 feet, point on top of	2,863.66
Township corner common to Ts. 29 and 30 S., Rs. 41 and 42 E., 10 feet southeast of; iron post, marked "2823 J"	2,822.989

JOHANNESBURG SOUTH ALONG LINE OF RANSBURG RAILROAD.

Johannesburg, 3.02 miles south of; 6 feet west of track; white granite boulder 1 by 1.5 by 2 feet, point on top of	3,417.01
St. Elmo, 1 mile north of; on west side of track where telegraph line crosses; telegraph pole, railroad spike in base of	3,302.30
St. Elmo, 610 feet northwest of switch; west side of track where telegraph line crosses; telegraph pole, nail in base of	3,192.96
St. Elmo, 50 feet west of switch stand; iron post, marked "3184 J"	3,184.032
St. Elmo, $\frac{3}{4}$ mile south of; in edge of cut on east side of track; white boulder, point on top of	3,089.20
St. Elmo, $1\frac{1}{2}$ miles south of; at north end of railroad trestle; in top of west end of cap. head in driftbolt	3,020.98
St. Elmo, 4 miles south of; at road crossing, top of rail	2,988
St. Elmo, $3\frac{1}{8}$ miles south of; 30 feet west of track; iron post, marked "2984 J"	2,983.933

LOS ANGELES, VENTURA, AND KERN COUNTIES.

TEJON, CAMULOS, SANTA SUSANA, AND CALABASAS QUADRANGLES.

The elevations in the following list are based on a bronze tablet in north stone buttress of main entrance to post-office building at Los Angeles, the elevation of which was determined by leveling of 1897 from a bench mark of the Coast and Geodetic Survey at San Pedro and is accepted as 270.119 feet above mean sea level, as published in the Appendix to the Nineteenth Annual Report, page 382.

The leveling was done by Mr. H. S. Crowe, levelman, in charge.

All bench marks are stamped with the letters "L.A." in addition to the figures of elevation.

BURBANK, VIA CHATSWORTH PARK RAILROAD, TO CHATSWORTH PARK.

	Feet.
Burbank, 117 feet northwest of northwest corner of depot, on west side and 51 feet from center of track; iron post, marked "563"	562.798
Burbank, 1 mile northwest of, 16 feet south of center of track, opposite east end of pump house on C. E. Patterson's ranch; on west corner of railroad signpost, 10-penny wire nail	577.02
Burbank, 1.5 miles northwest of, on southeast end of trestle 474 A; in guard rail top of bolt	587.83
Burbank, 2 miles northwest of, south side of railroad; in telegraph pole No. 475, 8-penny wire nail	592.69
MacNeil siding, west end of; center of track at road crossing	596.60
Telegraph pole 476, south side of railroad, railroad spike on	604.06
Trestle 476 A, southwest corner of; in guard rail, bolthead	608.52
Trestle 476 B, southwest corner of; guard rail, bolt in top of	616.85
Burbank, 3.8 miles northwest of, 20 feet south of center of track, at road crossing; in railroad signpost, 8-penny wire nail	621.23
Lankershim Toluca post-office, 85 feet east of northeast corner of depot, at northwest corner of Eighth street and Fernando avenue, on pepper tree 30 inches in diameter, 10-penny wire nail	631.49
Trestle 477 A, at west end of, base of rail	640.07
Telegraph pole 478, south side of railroad, 4-penny nail on	648.61
Garnsey siding, opposite signpost, base of rail	663.03
Garnsey siding, 300 feet west of, south side of railroad; on telegraph pole 479, 8-penny nail	664.38
Garnsey siding, 300 feet west of, 3.5 feet east of telegraph pole 479, 50 feet south of railroad track; iron post, marked "665 L.A."	665.035
Trestle 479 A, on first bent east of west end of; on guard rail, top of bolt	664.54
Kester siding, 50 feet south of center of track; on telegraph pole 480, 5-inch cut spike	675.16
Telegraph pole 481, 65 feet south of center of track; 4-penny cut nail on	692.15
Telegraph pole 482, 50 feet south of railroad; 6-penny wire nail on	697.48
Telegraph pole 483, 50 feet south of railroad; 20-penny cut nail on	707.28
Trestle 483 C, opposite, 50 feet south of center of track, 4 feet east of telegraph pole 484; iron post, marked "704 L.A."	704.333
Telegraph pole 484, 50 feet south of track; railroad spike on	704.03
Eucino siding, at east end of switch; first bolthead from west end of south side of trestle 484 C.	709.03

	Feet.
Encinosiding, west of west switch stand; first bolthead in guard rail west of bent No. 8 from west end of north side of trestle 484 D	711.68
Telegraph pole 485, 50 feet south of center of track; bolthead on	710.70
Cattle guard 485 B; base of north rail at	729.30
Telegraph pole 486, 50 feet south of track; railroad spike on	740.05
Section house "Reseda;" base of rail opposite	752.50
Telegraph pole 487, 50 feet south of track; railroad spike on	755.13
Telegraph pole 488, 50 feet south of track; 20-penny nail on	754.36
Telegraph pole 489, 110 feet east of; first bolthead from west end of south side of trestle 488 C, in guard rail	766.81
County road, 40 feet west of center of, near first telegraph pole west of road crossing, 50 feet south of railroad track; iron post, marked "773 L.A."	773.259
County road, 40 feet west of center of, 50 feet south of center of track; first telegraph pole west of road crossing, railroad spike on	772.71
Telegraph pole 490, 50 south of center of track; 20-penny nail on	791.45
Trestle 490 B, center of, base of rail	789.30
Telegraph pole 491, west side of track; railroad spike on	795.64
Telegraph pole 492, 50 feet west of track, on west edge of wagon road; railroad spike on	832.86
Peach orchard, at road crossing, base of rail	865.8
Telegraph pole 493, west side of track, railroad spike on	872.70
Telegraph pole 494, 50 feet west of railroad track, spike on	931.36
Chatsworth Park, in front of telegraph office at depot; top of north rail ..	931.92
Chatsworth Park, 315 feet west of northwest corner of depot, 96 feet north of center of track, at junction with road to Simi; on burr-oak tree 30 inches in diameter	930.31
Chatsworth Park, at corner of Simi road and Devonshire avenue, 1 foot north from southeast corner of Santa Susana Schoolhouse, 11½ inches below base of building; bronze tablet, marked "962 L.A."	962.554

CHATSWORTH PARK, VIA WAGON ROAD, TO FERNANDO.

Chatsworth Park, 0.7 mile east of, in center of road; on white-oak tree, 39 inches in diameter, 8-penny wire nail	974.17
Lime Kiln Arroyo, west end of bridge over	969.10
Lime Kiln Arroyo, on east bank of, 100 feet south of bridge; on sycamore tree 30 inches in diameter, 6-penny wire nail	967.38
Lime Kiln Arroyo, 125 feet east of east edge of, on west slope of hill; hub with 4-penny cut nail	966.01
Aliso Creek, on northwest corner of bridge over; on brace timber between two lower bolts, 8-penny wire nail	980.03
Chatsworth Park and Fernando, midway between; 5 feet south of fence corner, 37 feet south of center of road running east and west, and 45 feet east of road running north and south; iron post, marked "1031 L.A."	1,031.263
Fernando, 4 miles west of, north side of road, 6 feet south of corner post of east and west and north and south fence lines; 8-penny wire nail in plug	955.46
San Fernando Mission, 1,000 feet west of old building, south side of road; on third gum tree from west end of row, 8-penny wire nail	952.22
Fernando, in McClay & McClay Company's brick store building; bronze tablet, marked "1066 L.A."	1,065.997

CHATSWORTH PARK, VIA CALABASAS AND VEJOR, TO SIMI.

	Feet.
Chatsworth Park, 7.3 miles south of 12 feet north of intersection of roads running east and west and north and south; 8-penny wire nail in plug.....	837.27
Calabasas, 1 mile east of, 600 feet north of road on flat; 8-penny wire nail on notch on burr oak tree 18 inches in diameter.....	904.56
Calabasas, center of bridge.....	926.50
Calabasas, 38 feet east of northeast corner of calaboose building, at southeast corner of picket fence around vineyard, 60 feet northwest of west end of bridge; iron post, marked "928 L.A.".....	927.976
Calabasas, 160 feet southwest of postoffice and general store, 200 feet east of southeast corner of schoolhouse in yard; in oak tree 30 inches in diameter, 8-penny wire nail.....	1,071
Calabasas, 0.5 mile west of; at summit and north side of road where it turns north; on oak tree 12 inches in diameter, 20-penny wire nail....	1,120.27
Borchons Springs, 1,000 feet west of; at junction of five canyons, on north edge of road $1\frac{1}{2}$ miles west of summit; in oak tree 36 inches in diameter, 8-penny wire nail.....	837.40
Residence of Mr. Nash, 40 feet south of southwest corner of; in front yard inside of fence, 50 feet north of center of road, 150 feet west of west bank of creek; on eucalyptus tree 24 inches in diameter, 8-penny wire nail.....	753.55
Las Virgines Creek, intersection of road down; 35 feet south of main road; in pine fence post, 10-penny wire nail.....	772.49
House of J. B. Diace, 100 feet south of; 100 feet northwest of northwest corner of barn, on south side of road: on $\frac{1}{4}$ -section post, 8-penny wire nail.....	767.75
T. 1 N., R. 18 W., southwest corner of; 4 feet north of, iron post; marked "694 L.A.".....	693.958
Grape Arbor Station, 250 feet northeast of; 50 feet north of road, inside of corral on west bank of creek; in burr-oak tree, 36 inches in diameter, 8-penny wire nail.....	782.24
Grape Arbor Station, 0.8 mile from; 120 feet southwest of summit, in field, 75 feet south of road; on burr-oak tree 12 inches in diameter, railroad spike.....	936.75
Vejor Station, 800 feet west of; at east end of south side of bridge; top of square head bolt in guard rail.....	837.83
Vejor, 1.4 miles from; $\frac{1}{4}$ mile southeast of house in canyon, 70 feet north of road near summit, across small dry wash; in burr-oak tree, 60 inches in diameter, 8-penny wire nail.....	902.73
Summit of Pass, between Vejur and Newbury Park ranch; north side of road, where ledge of sandstone appears on surface, in center of most westerly slab of sandstone 10 by 4 by 1.5 feet; bronze tablet, marked "977 L.A.".....	976.831
Dry gulch, 35 feet west of west end of culvert over; north side of road; on live-oak tree, 18 inches in diameter, 8-penny wire nail.....	1,014.25
Lone View Cemetery, 210 feet west of west end of; south side of road, inside of fence; on burr-oak tree, 18 inches in diameter, 8-penny wire nail.....	907.70
Newbury Park ranch; in front of residence of W. H. Crowley, 30 feet south of wagon road at west corner of fence; iron post, marked "859 L.A.".....	859.149
Crowley's, 1.1 miles northwest of; 1,000 feet east of windmill in field, on west side of road; on burr-oak tree, 8-penny wire nail.....	902.53

	Feet.
Residence of John Day, 600 feet north of; on south side of wash; on live-oak tree, 24 inches in diameter, 8-penny wire nail	928.16
Summit of Pass from Crowley's to Simi; south side of road, in flat sandstone; bronze tablet, marked "1289 L.A."	1,288.886
Canada Verde, 500 feet north of residence of C. B. McCoy; notch on cottonwood stump 5 inches in diameter (between 2 prongs), 8-penny wire nail	828.78
C. B. McCoy's ranch; at entrance on road from Simi; on south side of red gate post, 8-penny wire nail	784.87
Simi, 1.3 miles from; 18 feet east of corner marked T. 2 N., R. 18 W., sec. 17, 24 feet east from center of road at fence post; iron post, marked "730 L. A."	729.853
Simi, $\frac{1}{2}$ mile west of; at junction of road from (Newbury Park) ranch to Simi and Ventura, east side of country road; on first fence post north of corner post, railroad spike	721.74
Simi, 200 feet northeast of; store of W. S. Kier, near gate of corral, west of barn of Simi Livery Stable; on telegraph pole, railroad spike	765.06

SIMI, VIA SANTA SUSANA PASS, TO CHATSWORTH PARK.

Simi, 1 mile east of; at residence of J. D. Kier; on second eucalyptus tree from east end of row, 12 inches in diameter, 8-penny wire nail	837.09
Station 525+50, on Southern Pacific Railroad (new line), 60 feet south of, south side of road; on eucalyptus tree 8 inches in diameter, 8-penny wire nail	941.80
Santa Susana, 30 feet southeast from southeast corner of bunk house, 165 feet southeast of section house, at corner of fence; iron post, marked "961 L. A."	960.676
Simi Hotel, 50 feet southwest of corner of road running north to; on eucalyptus tree 24 inches in diameter, 8-penny wire nail	988.99
Long grade, 1 mile west of; at corner of road where it turns north; on live-oak tree 24 inches in diameter, 8-penny wire nail	1,059.08
Santa Susana Pass, at foot of grade over, 40 feet north of road; on live-oak tree 24 inches in diameter, 8-penny wire nail	1,117.29
Santa Susana Pass, 1.1 miles southwest of; 100 feet east of water trough, south side of road; on live-oak tree 18 inches in diameter, 8-penny wire nail	1,319.78
Santa Susana Pass, junction of new road over with old telegraph road; on notch on root of live-oak tree, 18 inches in diameter, 6-penny wire nail	1,445.10
Santa Susana Pass, at summit and 50 feet north of road, 33 feet southwest of signpost, in large sandstone boulder 4.5 feet above ground; bronze tablet, marked "1604 L. A."	1,603.721
Bridge No. 6, 120 feet southwest of southwest corner of; 45 feet south of road; on live-oak tree 18 inches in diameter, 6-penny wire nail	1,193.70
Bridge No. 5, northeast corner of; on end brace, bolt-head	1,038.29
Santa Susana, 0.7 mile west of; T. 2 N., R. 17 W., sec. 12, southeast corner of, west side of road; witness post to corner, 8-penny wire nail on top of	983.61

SIMI, VIA GRIMES CANYON, TO FILLMORE.

Strathem's ranch, 1 mile north west of residence, at intersection of fence lines, 15 feet west of corner, 60 feet north of creek crossing; on fence post, railroad spike	669.34
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	Feet.
Simi Creek, west bank of; on notch on sycamore tree 43 inches in diameter, 8-penny wire nail	654.99
Big cut, 500 feet northeast of; on flat, 150 feet south of railroad; on cottonwood tree 6 feet in diameter, 20-penny nail	605.66
Olive grove, 750 feet east of fence at end of; south side of road up canyon; on live-oak tree 48 inches in diameter, 8-penny wire nail	625.69
Junction of road to Happy Camp Canyon, 1,000 feet south of fence line near, 50 feet west of road in canyon; on sycamore tree 16 inches in diameter, 8-penny wire nail	802.18
Epworth, $\frac{1}{2}$ mile east of; 150 feet west of summit from Happy Camp Canyon, at west end of Strathern's pasture; on gate post, railroad spike	942.58
Epworth, 39 feet east of center line of Buena Vista street, at corner of Broadway, 87 feet southeast of southeast corner of fruit-packing house; iron post, marked "868 L.A."	868.298
Sheckel's house, T. 3 N., R. 19 W., sec. 30, at corner of road from where it turns north; on corner post at east end of fence, railroad spike	865.48
Residence of Jefferson Baker, in front of; 8-penny nail on stake	1,059.07
Grimes Canyon, at summit of pass to; 8-penny wire nail on plug	1,404.04
Grimes Pass, at foot of steep grade below summit of; on oak tree 24 inches in diameter, 8-penny wire nail	1,050.90
Grimes Canyon, at junction of main road to summit of, with ranch road, in center of wash; on sycamore tree 36 inches in diameter, 8-penny wire nail	952.31
Grimes Canyon, at point of volcanic rock 50 feet north of location notice "Silva mining claim;" on sycamore tree 30 inches in diameter, 8-penny wire nail	783.01
Grimes ranch, sec. 7, T. 3 N., R. 19 W., 600 feet southwest of house, 100 feet east of corral, 30 feet east of small dry wash, 3 feet north of gate post on wagon road; iron post, marked "642 L.A."	641.962
T. 3 N., R. 19 W., sec. 7, northwest corner of; 70 feet southeast of corner stake and south of Capitol Crude Oil Company's derrick; in witness tree (live oak) 24 inches in diameter, 8-penny wire nail	560.78
Junction of roads to Grimes Canyon and Santa Paula, 30 feet south from signpost; on top of iron pipe	487.22
White house, 75 feet northwest from northwest corner of; 50 feet east from center of road; on notch on cottonwood tree, 8-penny wire nail	423.38
Fillmore, 125 feet southwest of southwest corner of depot, 65 feet southeast of center of road crossing at railroad, 1.5 feet north of fence corner; iron post, marked "469 L.A."	469.314

FILLMORE, VIA SOUTHERN PACIFIC RAILROAD, TO SAUGUS.

Fillmore, in front of depot; top of north rail	470.45
Trestle B, center of track; base of rail	483.1
Fillmore, 0.6 mile east of, 50 feet north of track; on telegraph pole 475, railroad spike	482.50
Telegraph pole 474, 30 feet north of track; railroad spike on	464.56
Telegraph pole 473, 50 feet north of track; railroad spike on	500.79
Telegraph pole 472, 50 feet north of track; 8-penny wire nail	529.38
Telegraph pole 471, 50 feet north of track; railroad spike on	578.70
Buckhorn, 153 feet northeast of northeast corner of depot, 50 feet north of track, 3 feet west of telegraph pole 470; iron post, marked "599 L.A."	598.893

	Feet.
Telegraph pole 469, 50 feet north of track; railroad spike on	648.90
Piru, in front of station; top of north rail	690.18
Piru, 108 feet north of northeast corner of depot, 50 feet west of road crossing; on notch on root of most easterly cottonwood tree in group of three, 8-penny wire nail	693.79
Piru Creek, east end of bridge over; at center of track, base of rail	701.04
Piru, 1 mile east of, at road crossing; on signpost, 50-penny cut spike	681.50
Camulos, center of track opposite depot	740
Camulos, 200 feet south of southeast corner of depot, 2.5 feet south of northwest corner of post-office; iron post, marked "732 L.A."	731.837
Telegraph pole 465, north side of track; railroad spike on	761
Mile post 464, 1,000 feet west of; at road crossing, spike on signpost	773.62
Road crossing, 25 feet south of railroad; spike on signpost	802.58
Telegraph pole 462, north side of track; spike on	839.79
Los Angeles and Ventura counties, 3.5 feet south of iron signpost of, 6 feet south of fence line, 50 feet north of center of track, 12 feet south of county road; iron post, marked "858 L.A."	858.173
Telegraph pole 461, north side of track; spike on	862.81
Telegraph pole 460, north side of track; spike on	901.36
Telegraph pole 459, north side of track; spike on	933.87
Telegraph pole 458, north side of track; spike on	947.24
Castac Creek, east end of bridge over; base of rail at center of track	975.1
Castac Creek, at east end of trestle approach to bridge; 20-penny wire nail, on south end of cap	973.35
Castac siding, 75 feet north of track; on telegraph pole 456, railroad spike	1,007.52
"San Francisco ranch," 81 feet east from northeast corner of house of superintendent, in northeast corner of yard, 2 feet from junction of fence lines, 15 feet west of center of road; iron post, marked "1054 L.A."	1,054.057
San Francisco Creek, at west end of bridge over; on south end of cap, 10-penny wire nail	1,085.17
Telegraph pole 453, north side of track; spike on	1,117.31
Santa Clara River, west end of bridge over; at center of track, base of rail	1,161.6
Saugus, road crossing north of depot	1,165.8
Saugus, 33 feet south of south corner of depot, 18 feet east of center of track, 18 inches from north corner of pump house; iron post, marked "1171"	1,171.097

RUSSELL'S RANCH, IN CONEJO VALLEY, VIA POTRERO AND SOMIS, TO
MOOR PARK.

Conejo schoolhouse, 200 feet southeast of southeast corner of; 150 feet south of gate to Russell's ranch, on east side of road; on notch on burr-oak tree 24 inches in diameter, 8-penny wire nail	900.43
Russell's ranch, 100 feet west of house, 150 feet north of road; on notch on root of burr-oak tree 60 inches in diameter, 8-penny wire nail	885.58
Russell's ranch, 1.4 miles west of; 80 feet north of road; on notch on root of most easterly sycamore tree in grove 36 inches in diameter, 8-penny wire nail	907.49
Russell's ranch, 2.4 miles west of; on north side of road, opposite northeast corner of fence, on south bank of creek; on notch on root of sycamore tree 48 inches in diameter, 8-penny wire nail	928.36

	Feet.
Madison ranch, 120 feet north of gate to; on north side of road; on notch on root of oak tree 24 inches in diameter, 8-penny wire nail	989.05
Riley's ranch, 1.2 miles from; 150 feet south of where road turns west, north side of road; on notch on burr-oak tree 48 inches in diameter, 8-penny wire nail	1,035.65
Riley's ranch, 25 feet northwest of gate and 20 feet west of fence line, 30 feet north of road; on notch on burr-oak tree 24 inches in diameter, 8-penny wire nail	1,054.54
Pass from Conejo to Potrero, summit of	1,306.9
Pass from Conejo to Potrero, 150 feet west of road; on slope of rock ledge in field; bronze tablet, marked "1315 L.A."	1,314.949
Summit, 0.6 mile west of; 40 feet north of road, on small saddle on grade to Potrero, on north slope of hill; on live-oak tree 8 inches in diameter, 8-penny wire nail	1,139.70
Conejo Valley and Hueneme roads, junction of, and west side of, opposite gate; on redwood fence post, 8-penny wire nail	748.08
Caspar Borchard's ranch, 35 feet west of gate, south side of road; on notch on root of burr-oak tree 36 inches in diameter, 8-penny wire nail	665.92
Pass, Borchard's to Camerillo, summit of	782.2
Guadalasca, El Conejo, and Calleguas grants, joint corner of; 10 feet north of road, in pile of rocks, at summit of ridge; iron post, marked "778 L.A."	778.104
Foot of grade, 600 feet west of first house from, 175 feet northwest of road to Camerillo; on notch on root of sycamore tree 36 inches in diameter, 8-penny wire nail	168
Calleguas grant, 300 feet north of barn, 50 feet west of corner of hay shed, west side of road, at north end of row of trees: on notch cut on eucalyptus tree 12 inches in diameter, 8-penny wire nail	151.1
Road crossing, 400 feet southwest of, at railroad, south side of road; on notch on last eucalyptus tree on north end of row, 24 inches in diameter, 8-penny wire nail	221.22
Somis, top of north rail in front of station	259.02
Somis, public school, 8 feet south of southeast corner of fence around; 15 feet west of public road; iron post, marked "288 L.A."	287.860
Somis, 1½ miles east of; at road crossing on northeast corner of west cattle guard; in 3-inch bulkhead plank; 8-penny wire nail	305.01
Lagol siding, 125 feet west of west end of switch, at road crossing, on corner fence post; spike	386.98
Lagol siding, 0.8 mile east of; at road crossing; spike on signpost	393.74
Ternez siding, 0.6 mile east of; opposite end of orchard, on northeast corner post of west cattle-guard fence; spike	432.78
Whistle signpost, 60 feet west of; at double road crossing, on northeast corner post, at center cattle guard; spike	472.50
Moor Park; top of north rail in front of depot	510.58
Moor Park, 20 feet southwest of southwest corner of depot, 30 feet north of center of track; iron post, marked "511 L.A."	511.360
Los Posas Creek, on north side of west end of bridge, on bulkhead plank; 40-penny cut spike	560.94

CASTAC, ALONG WAGON ROAD AND TRAIL, VIA GORMAN STATION AND
FORT TEJON, TO ROSE STATION.

Castac siding, on telegraph pole 456; spike	1,007.52
Castac, 1.2 miles north of; at turn of road where fence line ends, on cottonwood tree 24 inches in diameter; 20-penny nail	1,027.71

Feet.

Bluff, at foot of; 150 feet east of wagon road, on cottonwood tree 60 inches in diameter; 8-penny nail	1,058.77
Castac, 3 miles north of; on west side of road in fence, on cottonwood tree 18 inches in diameter; railroad spike	1,091.53
White house, at northwest corner of lane to; on cottonwood tree; 8-penny wire nail	1,140.34
Carmichael's ranch, 1½ feet west of northwest corner of fence, on north side of lane; iron post, marked "1172 L. A."	1,171.929
Elizabeth Lake, at intersection of road to	1.095
Elizabeth Lake Canyon, 50 feet northwest of junction of road to; in field on west side of road, on cottonwood tree 36 inches in diameter; railroad spike	1,198.63
J. W. Duncan's ranch, at gate corner post of fence around apricot orchard; railroad spike	1,262.51
J. B. Direze's ranch, 30 feet south of well, on south side of road where it goes through fence, on cottonwood tree 36 inches in diameter; 8-penny wire nail	1,288.51
Ruins of old adobe house, opposite east end of; on south edge of road	1,334.77
Cleared field, 250 feet southwest of fence line around; 50 feet south of wagon road, on sycamore tree 18 inches in diameter; 8-penny wire nail	1,350.97
Victor Cordova's residence, west side of; at west corner of fence around garden, 500 feet north of wagon road, on mesa above creek; iron post, marked "1457 L. A."	1,457.077
Deserted house on flat, 300 feet east of; 90 feet north of corner of road, on tree on fence line; 8-penny wire nail	1,490.18
Iron house of Frank S. Randolph, 0.6 mile from; on north side of road at turn, on notch on sycamore tree 2 feet above ground; 8-penny wire nail	1,581.16
Iron house of Frank S. Randolph; T. 6 N., R. 17 W., sec. 22, in northeast quarter of; 4 feet south of southeast corner of, at corner of shed, 200 feet south of wagon road, in Castac Canyon, on sycamore tree; 8-penny wire nail	1,624.04
Iron house of Frank S. Randolph, 0.1 mile from; 80 feet south of trail at turn, on small elder bush 8 inches in diameter; 8-penny wire nail	1,908.18
Iron house of Frank S. Randolph, 0.3 mile from; 12 feet east of trail to Oak Flats, at summit of ridge from Castac Creek; iron post, marked "2807 L. A."	2,807.200
Summit of ridge from Castac Creek, 0.8 mile south of; on south bank of wash where trail goes to spring in canyon, on burr-oak tree 30 inches in diameter	2,554.81
T. 6 N., R. 17 W., sec. 33, in southwest quarter of; adobe house of Randolph & Rock, 80 feet northwest of northwest corner of, on south bank of wash, on burr-oak tree 36 inches in diameter; 8 penny wire nail	2,498.32
House of Randolph & Rock, 1 mile from, on south bank of wash, 100 feet south of trail opposite where it goes over small hill, on burr-oak tree 42 inches in diameter; 8-penny wire nail	2,633
Piru Creek, summit of ridge on trail to	3,012.47
Trail from Oak Flats to Piru Creek, 20 feet north of; at summit of ridge, sandstone boulder 3 by 4 by 3; on knob on top of	3,017.83
Summit, 0.7 mile north of; 20 feet north of trail from Oak Flats to Piru Creek, at foot of steep grade, on burr-oak tree 30 inches in diameter; 8-penny wire nail	2,658.24
Summit of ridge, 1.7 miles northwest of; 80 feet south of southwest corner of frame of cabin, 30 feet south of trail, on burr-oak tree 48 inches in diameter; 8-penny wire nail	2,436.45

	Feet.
Summit of ridge, 2.5 miles northwest of; 25 feet south of trail where it goes over hill after crossing creek, on burr-oak tree 36 inches in diameter; 8-penny wire nail	2, 293.35
Spring Creek; 1,500 feet north of where it empties into Piru Creek, 45 feet north of trail where it turns north up Piru Canyon, on flat side of rock 6 by 2 by 4 feet; bronze tablet, marked "2060 L. A."	2, 059.470
Junction of Piru and Spring creeks, 1 mile north of; 100 feet west of trail, on sycamore tree 12 inches in diameter; 8-penny wire nail	2, 086.81
Rock slide, at foot of; 1 foot north of trail, on south corner of top of sandstone boulder 6 by 6 by 4 feet, 4.1 feet above ground, on knob	2, 146.73
Bainbridge's gate, 180 feet southwest of second crossing of creek from; 30 feet south of trail, on notch on sycamore tree 10 inches in diameter; 8-penny wire nail	2, 216.49
Bainbridge's house, 250 feet northeast of; T. 7 N., R. 18 W., sec. 34, at north corner of fence around hog corral, at south end of and 30 feet east of center of wagon road to house; iron post, marked "2307 L. A."	2, 306.395
Bainbridge's house, 1.1 miles north of; 180 feet north of wagon road where it comes into creek after leaving mesa, north bank of creek, on cottonwood tree 18 inches in diameter; 8-penny wire nail	2, 370.78
M. C. Bailey's house, 0.2 mile from, on west bank of creek where canyon narrows, on notch on leaning cottonwood tree 24 inches in diameter; 8-penny wire nail	2, 481.01
Alamo ranch, $\frac{1}{2}$ mile east of residence of Mr. Bailey, 200 feet north of road, on south bank of arroyo, on notch on most westerly cottonwood tree in group, 24 inches in diameter; 8-penny wire nail	2, 269.03
Alamo ranch, lake at gate to Bailey's; water surface of	2, 743.54
Alamo ranch, in jog of fence around house of M. C. Bailey; iron post, marked "2796 L. A."	2, 795.336
M. C. Bailey's house, 0.9 mile from; on east side of small knoll, 100 feet north of wagon road, on notch on scrub-oak tree 3 inches in diameter; 8-penny wire nail	2, 918.75
M. C. Bailey's house, 1.7 miles from; on hillside 50 feet north of wagon road, on scrub-oak tree 24 inches in diameter; 8-penny wire nail	2, 999.97
Neenach & Gorman station, 50 feet west of intersection of roads to; on oak plug; 8-penny wire nail	2, 152.51
Ruins of two adobe buildings, between; T. 8 N., R. 18 W., sec. 16; at line of, on plug 1 foot north of gatepost; 8-penny wire nail	3, 359.72
German ranch, 500 feet northwest of Charles Schliesmayer's house, on north side of road at spring, on notch on root of willow tree 12 inches in diameter; 8-penny wire nail	3, 526.46
Deserted two-story frame house, 50 feet west of northwest corner of; 50 feet south of center of road, on leaning cottonwood tree; 8-penny wire nail	3, 625.82
Gorman station, 15 feet west of northwest corner of O. N. Ralph's house, and between it and store building, 60 feet south of road; on willow tree 24 inches in diameter; 8-penny wire nail	3, 774.73
Gorman station, 1.2 miles west of; 25 feet south of wagon road to Gorman, at signboard to Frazier's mine; on corner post at junction of fence lines; 8-penny wire nail	4, 026.90
Tejon Pass, at summit, 6 feet south of brush fence and 40 feet north of wagon road; iron post, marked "4230 L. A."	4, 229.933
Barnes's house, 250 feet east of; 85 feet southwest of mining tunnel, 30 feet south of road on south bank of small gulch, on notch on burr-oak tree; 8-penny wire nail	4, 070.35

Feet.

Signboard marked "Bakersfield, 46 miles; Los Angeles, 105 miles; Grif- fin-Cuddy ranch, 9 miles," 125 feet southeast of; on notch in crotch between two live-oak trees in group of six; 8-penny wire nail	3,902.18
Los Angeles and Kern counties; 6-penny wire nail, on notch on post marking line	3,750.18
Los Angeles and Kern counties, 2.5 feet north of line post; iron post, marked "3744 L.A."	3,744.104
Lebec post-office, 150 feet east from northeast corner of adobe house on east side of road, on notch on oak tree 6 feet in diameter; 8-penny wire nail	3,574.52
Culvert, 150 feet west of; on east side of road, between two small hills, on notch on burr-oak tree 54 inches in diameter; 6-penny wire nail	3,456.09
Tejon dairy ranch, 150 feet north of fence corner at old adobe house, east side of road; on burr oak tree 60 inches in diameter, 8-penny wire nail	3,411.26
Tejon dairy ranch, 0.8 mile from, 9 feet east of center of road; on notch on oak tree 48 inches in diameter, 8-penny wire nail	3,338.49
Fort Tejon, in front of gatepost at entrance to residence of superintend- ent of Castac ranch, 45 feet west of wagon road; iron post, marked "3174 L. A."	3,173.480
Fort Tejon, 0.9 mile north of, 15 feet east of center of road; on burr oak tree 60 inches in diameter, 8-penny wire nail	3,008.48
Grapevine Creek, at first crossing, water surface	2,862
Grapevine Creek, 700 feet north of crossing, east side of road, 1.4 miles north of Fort Tejon; 60-penny spike on burr oak tree 36 inches in diameter	2,815.69
Grapevine Creek, at second crossing, water surface	2,778
Grapevine Creek, third crossing, water surface	2,569
Mrs. Pettit's house, 180 feet north of, 200 feet north of third crossing of Grapevine Creek on south bank, 40 feet east of road; on burr oak tree 48 inches in diameter, 8-penny wire nail	2,560.66
Grapevine Creek, fourth crossing, water surface	2,345
Grapevine Creek, fifth crossing, water surface	2,314
Grapevine Creek, 400 feet north of fifth crossing, on east side of road; on notch on burr oak tree 30 inches in diameter, 8-penny wire nail	2,304.15
Grapevine Creek, at sixth crossing, water surface	2,259
Grade from Rose station, $\frac{1}{2}$ mile south of top of; 20 feet east of road at top of hill where road runs across low place to the south; iron post, marked "2132 L. A."	2,131.529
Grade from Rose station, on top of ridge at; 50 feet south of road; on knob on rock 2 by 1 by 3 feet	2,050.79
Rose station, 2.1 miles from; 15 feet east of road at foot of steep grade, on knob on rock 2 by 6 by 2 feet	1,621.39
Rose station, 25 feet east of northeast corner of house, in front yard, 5 feet west of fence along public road; on notch on dead cottonwood stump, 8-penny wire nail	1,264.29
Rose station, creek crossing north of	1,239
T. 10 N., R. 19 W., at line of, 12 feet south of gate across road, 10 feet east of center of road 2 feet south of post 6 by 8 inches; iron post, marked "1085 L. A."	1,084.684

GORMAN, VIA QUAIL, NEENACH, MANZANA, FAIRMONT, AND ELIZABETH
LAKE, TO HAROLD SIDING (FORMERLY ALPINE).

Charles Schliesmayer's ranch, 1.5 feet west of corner, at intersection of
fence lines, 45 feet south of road; iron post, marked "3463 L. A." 3,462.718

	Feet.
Quail post-office and Gorman, at summit of pass between, north of road; on knob on bowlder 1 by 1 foot by 8 inches.....	3, 583. 22
Dry Lake schoolhouse, 130 feet west from southwest corner of, near north post of gate, on west side of fence; T. 8 N., R. 18 W., sec. 15, southwest corner of, on oak section corner stake; 8-penny wire nail..	3, 385. 41
House between Quail post-office and Dry Lake schoolhouse, 220 feet northwest of northwest corner of; 40 feet north of road; on willow tree 12 inches in diameter, 6-penny wire nail.....	3, 312. 35
Quail, 1,200 feet south of post-office, 500 feet southeast of west end of Dry Lake; 25 feet north of road; on willow tree 12 inches in diameter, 8-penny wire nail.....	3, 296. 83
McKenzie's house, 160 feet northeast of northeast corner of; at north- east corner of intersection of fences, 50 feet south of road; iron post, marked "3393 L. A.".....	3, 392. 690
Small wash, on flat on east side of; between old and new roads and 120 feet south of old road; 6-penny wire nail in plug.....	3, 226. 48
Summit of ridge, 180 feet south of, on road; on notch on white oak tree 18 inches in diameter, 6-penny wire nail.....	3, 157. 01
La Liebre ranch, at corner of fence where road turns to east, $\frac{1}{2}$ mile west of brick house on country road; iron post, marked "3091 L. A."..	3, 030. 936
Brick house, $\frac{1}{2}$ mile east of; on north side of road; railroad spike on corner post of fence.....	3, 040. 25
Neenach, in front of store and post-office of J. C. Nelson; center of road.....	3, 006
Neenach, $\frac{1}{2}$ mile east of; 250 feet southeast of southeast corner of La Liebre schoolhouse, 60 feet north of road; on top of oak stake on fence line, marked "L. L. XXXII," 6-penny wire nail.....	2, 993. 14
Henry Hatch's ranch (Vala Vista), at residence of; 2 feet east of gate, in front picket fence; iron post, marked "3039 L. A.".....	3, 039. 018
Henry Hatch's ranch (Vala Vista), opposite west end of fence, at corner of sections 16 and 17, 20 and 21; on top of stake in center of road, 8-penny wire nail.....	3, 046. 85
Old adobe house, 1,000 feet east of; west side of arroyo; railroad spike on corner post of fence lines.....	2, 992. 95
T. 8 N., R. 16 W., sec. 14, at southwest corner of; north side of road; on corner post of fence, small spike.....	2, 907. 56
Section 24, northwest corner of; on small rock 4 by 8 by 6 inches in center of road northwestward to ranch house.....	2, 842. 62
Manzana, 0.9 mile from, on east side of road where it turns south; on first post east of corner post, 20-penny nail.....	2, 818. 29
Manzaua, opposite driveway from main road to store and post-office of A. E. Silvey, on east side of road, 1 foot south of fence post; iron post, marked "2870 L. A.".....	2, 869. 559
Manzana, 0.2 mile from; 40 feet east of signboard marked Bakersfield to north, Los Angeles east, east side of road, on corner post of fence, 8-penny wire nail.....	2, 900. 22
Section 24, southeast corner of; on corner of rock in middle of road, 8-penny wire nail.....	2, 875. 65
Section 24, $\frac{1}{2}$ mile east of southeast corner, 50 feet southeast of fence corner; on corner post of north and south line, 8-penny wire nail....	2, 887. 40
Deserted frame house, 600 feet southwest of; south side of road at inter- section with north and south road; on corner fence post, 6-penny wire nail.....	2, 906. 77
Yucca Grove, $\frac{1}{2}$ mile east of; on north side of road, at northwest corner of almond orchard; on corner post of fence, 8-penny wire nail.....	2, 954. 14

	Feet.
Bonita ranch, at northeast corner of almond orchard, on corner post at intersection of fence lines, 8-penny wire nail	2, 872. 79
Bonita ranch, 1 mile east of; in front of Mr. Scott's residence, 100 feet north of road, at south point of heart-shaped flower bed; on granite boulder 1 by 1 foot by 4 inches	2, 864. 47
Fairmont, 300 feet southeast of southeast corner of public schoolhouse, at southeast corner of fence: iron post, marked "2786 L. A."	2, 785. 588
Fairmont, 1.1 miles from, at point where road turns to south; on southwest corner of signpost marked "Los Angeles 66 miles. Bakersfield 72, Del Sur 9, Lancaster 18 miles." 8-penny wire nail	2, 780. 31
Fairmont, 3 miles southeast of; at west side of road, where fence line crosses short grade; on fence post, 8-penny wire nail	2, 748. 32
Almond orchard, below, at foot of grade; on corner post of fence at intersection, 8-penny wire nail	2, 765. 52
W. A. Spencer's house, 75 feet southeast from southeast corner of, 1 foot south of fence corner; iron post, marked "2803 L. A."	2, 802. 809
W. A. Spencer's house, 1.1 miles from, at forks of road; on signpost marked "Bakersfield 77 miles, Los Angeles 62 miles, Mohave 32 miles." 8-penny wire nail	2, 835. 82
Signpost marked "Bakersfield 77 miles. Los Angeles 62 miles, Mohave 32 miles," 0.8 mile south of; on west side of road where canyon commences to narrow; on bolt driven to surface of ground	3, 039. 01
Elizabeth Lake, wagon-road pass to, at summit of, on west side of cut; iron bolt, 2 feet above ground	3, 382. 40
Elizabeth Lake, wagon-road pass to, summit of, at foot of steep grade below; on north side of post, marked "Bakersfield 79 miles, Fairmont 8 miles. Los Angeles 60 miles," 8-penny wire nail	3, 298. 98
Elizabeth Lake post-office, 50 feet southwest of southwest corner of James Hefner's house, 15 feet south of center of road; on corner cottonwood tree, 24 inches in diameter of row of trees, 8-penny wire nail	3, 300. 20
Elizabeth Lake, 0.4 mile from: at turn of road; in signpost marked "Los Angeles 64, Bakersfield 80, Lancaster 17," 20-penny wire nail ..	3, 334. 12
Pedro Andrada's house, 60 feet north of; 2 feet northeast of signboard at corner of road where it forks east and south; iron post, marked "3403 L. A."	3, 402. 719
Pedro Andrada's house, 300 feet north of, on east side of wagon road at foot of hill, 175 feet north of signpost marked "Alpine 15 miles;" on notch on willow tree 18 inches in diameter; 8-penny wire nail	3, 396. 51
Manuel Andrada's ranch, on south side of road; on west gatepost in fence, 20-penny nail	3, 467. 78
Stone culvert, 90 feet east of; at end of south fence line and at junction of north and south and east and west fence lines; on corner post of fence, 6-penny wire nail	3, 396. 12
Arroyo, at north end of bridge over; on east end of last plank; on north end bridge, 40-penny nail	3, 253. 94
Hill, on slope of, 25 feet south of road; iron post, marked "3177 L. A." ..	3, 176. 513
Manuel Andrada's ranch, 5 miles from: 30 feet southeast of fence corner, on fence post of east and west fence line, 20-penny wire nail	3, 103. 40
Arroyo, intersection of road with, 200 feet southeast of; 30 feet south of road, 8-penny nail on plug	3, 001. 47
J. G. Ritter's house, $\frac{1}{2}$ mile north of; 450 feet north of gate, 12 feet north of road at summit of ridge at head of valley; iron post, marked "3048 L. A."	3, 047. 223

	Feet.
J. G. Ritter's house, 0.9 mile from; 30 feet east of culvert, 15 feet south of center of road at summit of ridge; 8-penny wire nail on redwood plug 2 by 2 inches	2,934.99
Almagoosa Creek, 100 feet south of; 150 feet south of road, 250 feet west of southwest corner of deserted frame building; on juniper tree 24 inches in diameter; 8-penny wire nail	2,840.65
Signpost marked "Alpine 5 miles," 15 feet west of; 100 feet east of road up canyon, 200 feet south of road to Palmdale; iron post, marked "2831 L. A."	2,830.299
J. Wolff's field, 600 feet northwest of old adobe building; 500 feet east of frame building, at intersection of north and south and east and west fence lines, southeast corner of sec. 30; 8-penny wire nail on corner post	2,962.39
Intersection of north and south and east and west fence lines, 10 feet south of center of road; square bolthead on corner post 3.3 feet above ground	2,939.58
Junction of roads to Alpine and Palmdale, 25 feet south of; near east end of small knoll; 8-penny wire nail in plug	2,884.16
Dry Lake, center of bed of	2,870
Summit of small knoll, south side of wagon road; on notch on juniper tree 8 inches in diameter; 8-penny wire nail	2,920.14
Mrs. A. M. Steele's ranch, 12 feet south of center of road; on first post east of corner post of east and west fence line; 8-penny wire nail	2,855.93
Una Lake, T. 5 N., R. 12 W., sec. 8, lot 8; 1.5 feet southeast of southeast corner of bunk house of South Antelope Valley Irrigation Company; iron post, marked "2820 L. A."	2,819.692
Harold Siding (formerly Alpine), 1.5 feet west of northwest corner of fence around railroad section house; 9 feet east of center of track; iron post, marked "2826 L. A."	2,826.027

ELIZABETH LAKE, VIA SAN FRANCISQUITO CANYON, TO SAUGUS.

Elizabeth Lake, 0.4 mile east of; at turn of road; on signpost marked "Los Angeles 64, Bakersfield 80, Lancaster 17;" 20-penny wire nail ..	3,334.02
Pedro Andrade's house, 300 feet north of; 175 feet north of signpost on east side of wagon road at foot of hill, on notch on willow tree 18 inches in diameter; 8-penny wire nail	3,396.43
P. Andrade's house, 60 feet north of; 2 feet northeast of signboard at forks of road; iron post, marked "3403 L. A."	3,402.634
Summit of ridge in pass to San Francisquito Canyon, 8 feet west of center of road; 8-penny wire nail on plug	3,707.28
Elizabeth Lake, 2.8 miles southeast of; 100 feet south of road, 25 feet south of bank of wash, 500 feet southeast of log cabin, on notch on elder tree 18 inches in diameter; 8-penny wire nail	3,423.63
Elizabeth Lake, 3.5 miles southeast of; 35 feet west of road, on knob at foot of scrub-oak tree 8 inches in diameter; 8-penny wire nail	3,189.52
School building, at southeast corner of; on oak post; 8-penny wire nail ..	2,952.53
Juan de Cellis's house, 150 feet south of; south side of wagon road, on live-oak tree 36 inches in diameter; 8-penny wire nail	2,679.21
Creek, on west side of bridge over; top of square bolt on north end of brace	2,553.78
Juan de Cellis's house, 1 mile from; at turn of road on top of first hill south of bridge; iron post, marked "2604 L. A."	2,603.926
Juan de Cellis's house, 2.2 miles from; 0.6 mile from foot of grade, on west side of road at turn where steep grade begins; on knob on rock ..	2,411.96

Feet.

Creek crossing, 100 feet north of; west side of road at foot of steep grade, on notch on sycamore tree 30 inches in diameter; 8-penny wire nail	2, 140.52
Creek crossing, on south bank at west side of road; on notch on sycamore tree 30 inches in diameter; 8-penny wire nail	2, 022.33
Creek crossing, 100 feet west of; south of canyon, on east side of road, on notch on sycamore tree 36 inches in diameter; 8-penny wire nail	1, 993.48
Rocky hill, at foot of; on west side of road, on notch on live-oak tree 30 inches in diameter; 6-penny wire nail	1, 942.92
Canyon, at turn of road in: 15 feet below small ditch where it turns around point of hill; iron post, marked "1913 L. A."	1, 912.352
Small flat, on east side of road; on notch on sycamore tree 24 inches in diameter; 4-penny wire nail	1, 875.84
West side of road where it turns before crossing creek: on notch on sycamore tree 36 inches in diameter; 4-penny wire nail	1, 786.66
Creek crossing, 75 feet south of; 25 feet east of road on slope, on notch on live-oak tree 48 inches in diameter; 4-penny wire nail	1, 736.59
St. Francis ranch, T. 5 N., R. 16 W., sec. 1, at turn of road from: west side of road, on willow tree 12 inches in diameter; 4-penny wire nail	1, 669.40
St. Francis ranch, 1 mile south of; 40 feet west of road on small flat, 5 feet east of cottonwood tree; iron post, marked "1600 L. A."	1, 599.292
St. Francis ranch, 1.7 miles south of; 50 feet west of road on flat, on willow tree 24 inches in diameter; 4-penny wire nail	1, 545.29
Mrs. B. Raggio's ranch, T. 5 N., R. 16 W., sec. 14, 60 feet northwest of gate; on east side of road, on sycamore tree 36 inches in diameter; 4-penny wire nail	1, 427.92
Mesa, 500 feet northeast of deserted adobe house on; 50 feet west of road, on notch on sycamore tree 30 inches in diameter; 4-penny wire nail	1, 368.76
Henry Ruiz's house, 50 feet east of corner of; 15 feet west of center of road, on walnut tree 18 inches in diameter; 4-penny wire nail	1, 308.37
San Francisquito school district ranch house of Henry Ruiz, 4 miles south of; 65 feet east of junction of old and new wagon roads, on notch on sycamore tree 36 inches in diameter; 4-penny wire nail	1, 273.62
Edw. D. Kichline's field, in northwest corner of; at foot of grade over mountain, 1 foot east of corner of fence; iron post, marked "1235 L. A."	1, 235.181
San Francisquito school district ranch house, 2 miles from; 100 feet east of road at east end of steep grade from summit, on notch on wild cherry tree 12 inches in diameter; 4-penny wire nail	1, 332.73
Saugus, 2.2 miles from; 1.3 miles from east end of grade on west side of road, on redwood fence post; 8-penny wire nail	1, 231.53
Saugus, 1.6 miles from; in field 225 feet east of wagon road, opposite gate in fence marked "Private Road" through San Francisco ranch, on notch on burr oak tree 60 inches in diameter; 4-penny wire nail	1, 197.57
Saugus, 33 feet from south corner of depot, 18 inches from north corner of pump house, 18 feet from center of track; iron post, marked "1171 L. A."	1, 171.097

SHASTA COUNTY.

REDDING QUADRANGLE.

The elevations in the following list are based on an aluminum tablet set in first angle of wall on north side of east entrance to courthouse in Redding, about 3 feet above ground. The height of this

bench mark was accepted as 591.994 feet, being based on the elevation, taken from the Southern Pacific profiles, of 555 feet for the top of the east rail of the western track opposite approach to depot hotel at Redding.

The leveling was done by Mr. L. A. Whereat, levelman, under the direction of Messrs. R. H. McKee and A. B. Searle, topographers.

All bench marks depending on this datum are stamped with the letter "R" in addition to the figures of elevation.

REDDING, VIA FURNACEVILLE, TO WARD'S RANCH ON REED'S TOLL ROAD.

	Feet.
Redding, south depot inclosure, top of northeast corner post of	558.67
Redding, Hickory street, on southeast corner of bridge at; nail in top of post	547.70
Blacksmith shop at fork of road to Anderson; at foot of signboard post; cross on rock	497.46
Sacramento River, free bridge, on downstream side of; on bank, at foot of approach; top of nut in guard rail	481.21
Sacramento River, under free bridge; surface of water (July, 1900)	456
Enterprise Saloon, 80 feet west of; at forks of Millville and Anderson roads, at foot of signboard post; cross on rock	538.96
Enterprise Saloon, $\frac{1}{2}$ mile east of; junction with road to Millville, 40 feet west of signpost; nail in top of forked stump	554.77
Perry Mark place, in second post south of northeast corner of; top of staple	565.28
Ragsdale gate, spike in stump outside of	555.77
Copper City, fork of road to; 5 feet north of signboard tree; nail in stump	551.28
Loomis Corners, 2,000 feet west of; south side of road; forked pine tree, on root of	562.53
Loomis Corners, west side of Leighton's house and 2 feet south of northeast corner of fence around; iron post, marked "550 R"	550.300
Loomis Corners, 1.1 miles east of, at fork of road on top of hill; signpost, plug at foot of	629.79
Rick's gate, pine tree 24 inches in diameter, nail in foot of	630.45
Shick's orchard, 200 feet east of, at gate; 2 feet from oak tree 6 inches in diameter, nail in stump	644.08
Spugel's gate, pine tree, nail in foot of	666.33
Ellarkamp's, 300 feet south of; oak tree 14 inches in diameter, nail in root of	653.09
Bella Vista, about 2 miles northwest of, at fork of Oregon road, north side of road; large forked pine tree, nail at root of	690.52
Frazier Corners, at junction of Bella Vista and Anderson roads, on north side of road; oak tree with Bella Vista signboard, nail in root of	532.16
Drennan's, 12 feet west of; large oak tree, nail in root of	544.38
Fritz Lemm's barn, fence post in front of, nail in top of	545.39
Taylor's gate, 100 feet east of; plug in corner of fence	572.46
Chris Lemm's house, near, on left bank of Salt Creek; large oak tree, nail in root of	574.52
Calkins, at east side of lane to, on south side of road; 5.3 feet from fence, cross on rock	603.26
Irrigating flume, 60 feet west of, 1 foot from fence on south of road; cross on rock	617.35

	Feet.
Melton's fence, corner on left of road; large oak tree, nail in root of	636.59
Rocky Plains, at left of road, 5 feet from oak tree 8 inches in diameter; cross on large rock	1,001.27
Rocky Plains, near center of, about 2 miles southwest of Ben Jenkins's house, 15 feet south of road; iron post, marked "1109 R"	1,109.085
Reed's toll road, $\frac{1}{2}$ mile from beginning of; on south side of large pine tree, nail in root of	1,216.65
Ben Jenkins's, east side of road; pine tree, nail in root of	1,236.37
Tollhouse, 700 feet west of, east side of road; nail in 16-inch oak tree	1,047.67
Milepost marked "2" and "10," 60 feet east of, west side of road; top of stump	1,080.76
Little Cow Creek bridge, east approach to; nail in south end of first plank	1,094.43
Afterthought (Furnaceville) smelter, west side of road; nail in west end of baseboard	1,151.76
Furnaceville, in front of Flake's saloon; oak tree 8 inches in diameter, nail in root of	1,164.78
Hoffman's house, in front of; oak tree 15 inches in diameter, nail in root of	1,224.22
Ward's, 100 feet east of fork leading to Oak Run road, 3 inches from pine tree, south side of road, 18 inches in diameter, which supports Ward's letter box; between two rocks below marking on tree, iron spike	1,278.82
Ward's field, 2 feet east and 8 feet south of corner of fence around, south side of Reed's (Redding-Furnaceville) toll road and 12 feet west of fork of private road leading via Eiler's to Oak Run road; iron post, marked "1279 R"	1,279.021

REDDING, ALONG SOUTHERN PACIFIC RAILROAD, VIA COPLEY, KENNETT,
AND ELMORE, TO SLATONIS.

Milepost 262, 300 feet south of; whistling post, plug at foot of	520.07
Middle Creek station; top of rail in front of	523.3
Middle Creek station, 0.45 mile north of; at milepost 263, top of rail	528.4
Rock Creek, 0.37 mile north of, milepost 264; plug at foot of	544.03
Keswick, at depot; top of rail	564.5
Keswick, 0.58 mile north of, at milepost 266; plug at whistling post	569.25
Milepost 267; telegraph pole, spike in	581.88
Milepost 268, spike in	594.13
Milepost 269; first telegraph pole north of, plug at foot of	594.18
Copley, at freight house; top of upper rail	597.8
Copley schoolhouse, 5 feet south of southwest corner of (Flat Creek school district); iron post, marked "732 R"	731.929
Milepost 270, whistling post at, plug at foot of	598.52
Milepost 271, top of rail at	609.6
Milepost 272, first telegraph pole north of, spike in	621.85
Milepost 273, spike in	633.52
Milepost 274, spike in	639.03
Milepost 275, spike in	651.04
Milepost 276, 12 feet north of; white stake, marked "G," top of	656.92
Backbone Creek bridge, top of rail at	666.3
Milepost 277, telegraph pole at, spike in	666.20
Kennett depot, top of rail at	667.4
Milepost 278, brace to plug at foot of	671.14
Milepost 279, first telegraph pole north of, spike in	682.27

	Feet.
Pitt River, at junction with Sacramento River; water elevation, July 20, 1900.....	639
Milepost 280, plug at first telegraph pole north of.....	687.27
Milepost 281, spike in.....	715.16
Winton Lodge, top of upper rail at.....	716.6
Morley water tank, top of rail at.....	718.
Milepost 282, spike in.....	721.69
Milepost 283, spike in.....	743.71
Milepost 284, spike in.....	753.85
Schoonover's house, west of, 3 feet west of fence, 900 feet east of center of railroad truss over Sacramento River, 58 feet south of track; iron post, marked "791 R".....	791.014
Elmore platform, top of upper rail at.....	804.0
Milepost 286, 250 feet north of; whistling post, plug at foot of.....	826.45
Milepost 287, top of black witness stake marked "5466+37".....	869.64
Milepost 288, top of upper rail at.....	897.3
Milepost 289, spike in.....	904.20
Milepost 290, second pole north of, spike in.....	926.60
Milepost 291, plug at foot of.....	939.32
Milepost 292, spike in.....	961.43
Smithson schoolhouse, 12 feet south of southeast corner of; iron post, marked "1025 R".....	1,024.991
Baird Spur station, top of rail at.....	964.9
Milepost 293, spike in.....	981.32
Milepost 294, spike in.....	1,003.46
Milepost 295, at second pole north of; plug.....	1,036.40
Milepost 296, 2.4 feet from first pole north of; plug.....	1,074.97
Milepost 298, spike in.....	1,120.41
Delta, outside track, at depot culvert 298 B; top of lower rail.....	1,135.9
Delta schoolhouse, in front of, 3 feet north of center of porch, 100 feet south of Oregon road; iron post, marked "1322 R".....	1,322.115
Milepost 299, top of witness stake 6100+92.....	1,147.07
Milepost 300, spike in.....	1,186.98
Milepost 301, spike in.....	1,213.12
Slatonis station, in front of marking board; top of upper rail.....	1,236.1
Milepost 302, spike in.....	1,248.39
Milepost 303, plug at foot of.....	1,289.40

ENTERPRISE, VIA PALOCEDRO AND BELLA VISTA, TO FRAZIER CORNERS.

Enterprise saloon, $\frac{1}{2}$ mile south of, at Tracy's; large oak tree, plug at foot of.....	515.63
Enterprise, 1.8 miles south of, on top of flat, where Vanbalveren's private road turns off; oak tree, nail in root of.....	525.91
Schorb's, 5 feet north of north end of farm gate, $4\frac{1}{2}$ feet from fence; cross on rock.....	456.23
Harris's house, opposite; oak tree, nail in root of.....	454.64
Pacheco schoolhouse, 2 feet south of southwest corner of, 20 feet east of road; iron post, marked "449 R".....	449.289
Deacon's house, in front of; oak tree, nail in root of.....	442.82
Densmore's house, 15 feet west of gate; stump, nail in top of.....	438.38
Stillwater Plains, Dillon's house; east gatepost, nail in top of.....	492.03
Stillwater Plains; Fall River and Redding roads, fork of; nail in stump of signpost.....	495.39

	Feet.
McAvoy's house, opposite; large oak tree, nail in root of	505.08
Junction with old Anderson-Millville road; large oak tree, on root of ..	518.49
Anderson new road, at junction and west of road; oak tree, nail in root of	443.67
Snell's gate, east side of road; oak tree, nail in root of	467.22
Palocedro; large oak tree, nail in root of	459.91
Palocedro, 1.09 miles north of; east side of track: nail in top of stump ..	472.79
Bell schoolhouse, 0.12 miles north of; west of track and 90 feet south of cattle guard; nail in top of stump	487.79
Bellavista, 1.23 miles south of; plug at foot of stump	497.75
Bellavista warehouse; baseboard on west side of, and in line with white fence on lower side of Redding road, nail in top of	520.42
Bellavista; 2 feet southwest of southeast corner of fence around super- intendent's house, 15 feet north of county road as traveled: iron post, marked "537 R"	537.372

PALOCEDRO, VIA MILLVILLE AND PAWNEE, TO WARD'S RANCH AND
CLOVER CREEK FALLS, ON FURNACEVILLE ROAD.

Palocedro, 1½ miles east of; 300 feet west of Leech's house, south side of road; large oak tree, nail in root of	467.66
Oak Run Bridge, 0.47 mile west of; south side of road; large oak tree, nail in root of	482.75
Millville "Tidings" office, at foot of old flag pole; cross on rock	499.49
Millville schoolhouse, 2 feet south of southwest corner of; iron post, marked "513 R"	513.278
Webb, or Davis, place, about 400 feet east of; south side of road; large pine tree, nail in root of	539.98
Rathburn's, south side of road; pine tree, nail in foot of	540.25
Noonan's, north side of road; pine tree, nail in root of	558.37
Meyer's, south side of road; live-oak tree, nail in root of	572.04
Rose Hill, 0.17 mile northeast of top of; south side of road; oak tree, nail in root of	733
John Hereford's, opposite house, north side of road: oak tree, nail in root of	740.19
Hereford's, 0.6 mile northeast of, at top of small hill and south side of road; 2 feet from fence post, plug	776.04
Hufford's house, cross on rock at gate	916.10
Joseph's house, in front of, south of road; burned oak tree, nail in root of ..	984.57
Frank Joseph's house, 540 feet northeast of, 6 feet southeast of tama- rack road, 1½ feet of northwest fence corner of the Tom Webb place and on continuation of division line between the Webb and Joseph farms; iron post, marked "977 R"	977.332
Boyce (now Joe Hunt) place, north side of road at fork; oak tree, nail in root of	990.97
Smith's, at watering trough; large oak tree, nail in root of	1,017.28
Pawnee, at gate of post-office: cross on round rock	1,129.04
Pawnee schoolhouse, ¾ mile east of, 45 feet south of road; large oak tree, nail in root of	1,211.39
Webb's gate, 15½ feet east of, 6 feet from fence; cross on rock	1,266.42
Twin Valley road, junction with; at signpost, cross on large flat rock ..	1,333.84
Dry Clover Creek, on hillside, opposite two new cabins on flat; large oak tree by fallen tree, nail in root of	1,198.15
Dry Clover Creek, 100 yards below two new cabins at copper prospect; large oak tree on road, nail in root of	983

	Feet.
Dry Clover and Clover creeks, between, on trail 500 feet on South Clover Creek side of divide; oak tree, nail in root of	1,025.15
Kennedy's road crossing of Clover Creek; above fence, large oak tree, nail in root of	952.16
Wm. McBride's, $\frac{1}{2}$ mile northwest of, on top of hill, at cross roads; large oak tree, nail in root of	1,336.15
Carpenter road crossing, 100 feet north of; oak tree, nail in root of	1,463.92
Blay's gate, opposite; nail in top of stump	1,564.51
Strayer's; pine, nail in root of	1,554.72
Oak Run road, at junction with; oak tree, nail in root of	1,452.07
Estep's, at junction with road from Swede Creek; oak tree with sign-board, nail in root of	1,463.55
Colby's house, 3,000 feet north of, west of road; oak tree, nail in root of	1,560.66
Osburn's house, near, west of road; buckeye tree, nail in root of	1,852.50
Bullskin Hill, top of; oak tree, nail in root of	2,042.73
Bullskin Hill, foot of, opposite Esler's letter box, at fork of private road to Ward's on Reed Toll road; large oak tree, nail in root of	1,425.34

MILLVILLE, VIA SHINGLETOWN CUT-OFF ROAD, TO BEAR CREEK CROSS-
ING.

Millville, $\frac{3}{4}$ miles south of, at forks of Anderson and Shingletown roads; in fence corner at end of lane, plug	533.59
Darh's house, in front of, southwest of road; oak tree, nail in root of ..	800.99
George Darh's house, 190 feet east of gate, 2 feet north of fence, south side of road, on top of grade going down to Bear Creek; iron post, marked "806 R"	805.969
Bear Creek, on left bank at end of bridge; oak tree, nail in root of	728.67

REDDING, VIA SHASTA, TO KESWICK.

French place, 475 feet east of house at, at fork of old road, south of main road; large forked oak tree, nail in root of	663.01
Cabin, at watering trough, 425 feet east of fork of well-traveled road; in fence corner, nail in plug	714.82
White house, north of road; locust tree, nail in root of	887.59
Old Spanish Mine boarding house; hitching post, plug at foot of	935.39
Traveler's Rest, at junction with road to Igo; signpost, plug at foot of ..	974.75
Shasta, $\frac{1}{2}$ mile south of, fork of road to Middle Creek; cottonwood tree (signboard tree), nail in root of	943.08
Shasta, 50 feet northwest of west corner of Empire Hotel, 4 feet south of south corner of corral, on the northeast side of main street through Shasta and on northwest side of street going to Keswick; iron post, marked "1049 R."	1,049.057
Shasta, junction with road to Keswick at Empire Hotel, northwest of road; locust tree, nail in root of	1,045.30
Iron Mountain, at fork of road to; signboard tree, nail in root of	914.51
Keswick, Methodist Church; under south corner of front, cross on rock ..	793.41
Keswick schoolhouse, 6 feet south of first angle of west face; iron post, marked "778 R"	778.181

FRAZIERS CORNERS, VIA BEAR VALLEY, COPPER CITY, MADISON'S, AND
KELLY'S RANCH, TO BAGLEY FLAT.

Kelly's house, 180 feet east of; live-oak tree, nail in root of	698.44
Houston's house, 140 feet west of; large oak tree, nail in root of	640.31

	Feet.
Houston ranch, 1.6 miles northwest of; at junction with Redding and Copper City roads; 6-inch live-oak signboard tree, nail in root of . . .	710.25
Houston ranch, 1.6 miles northwest of; on Stillwater road, 15 feet south of fork with and 5 feet east of Copper City road, and 500 feet south of forks with road to Bass's; iron post, marked "710 R"	710.127
Lillienthal's, opposite; oak tree, inside fence, nail in root of	748.70
East Valley Creek, 55 feet west of divide at head of; 3 feet south of road; oak tree, nail in root of	1,034.16
Bear Valley stage station, 0.15 mile southwest of, 180 feet northeast of junction with Bellavista road, 18 feet southeast of road, 2 feet northwest of fence, on top of hill; iron post, marked "945 R"	945.008
Bear and Jones valleys, 60 feet northeast of summit on grade between; pine tree, nail in root of	1,143.21
Gregory's, in fence at barn gate; pine tree, nail in root of	987.76
Pitt River, at foot of grade at new bridge; Whittaker's saloon, plug at corner of	783.64
Pitt River, surface of water at new bridge, September 5, 1900	760
Antone's fence, opposite corner, north of road; pine tree, nail in foot of	783.73
Squaw Creek, where road turns up, 2 feet from fence; cross on rock . . .	762.79
Copper City Hotel, in front of; large oak tree, nail in root of	796.38
Copper City schoolhouse, 25 feet south of; at southeast corner of lot as at present defined by fence; iron post, marked "806 R"	806.213
De la Mar, at top of hill; pine tree, plug at foot of	1,121.30
Lawson Creek, 400 feet east of point at; large oak tree, nail in root of . .	1,033.77
Second Creek, at cabin; oak tree, nail in root of	1,055.41
Madison's house, 0.6 mile south of, at top of hill; black oak tree, nail in root of	1,180.62
Madison's house, 150 feet north of, on trail; large leaning oak tree, nail in root of	977.01
Madison's, 1.5 miles north of, east of trail; oak tree, nail in root of . . .	1,191.09
Squaw Creek; T. 34 N., R. 2 W., near east side line of, 300 feet above first crossing, 1.87 miles north of Madison's house, 6 feet east of trail; iron post, marked "1047 R"	1,046.693
Terrup Chatta, on top of hill north of, east of trail; oak tree, nail in foot of	1,389.60
Kelly's barn, opposite; pine tree, nail in root of	1,393.86
Sawmill on Squaw Creek, 0.2 mile north of, west of trail; forked oak tree, nail in root of	1,427.35
Kelly's house, 1.39 miles north of; T. 35 N., R. 2 W., near east line of, 10 feet west of trail on saddle; iron post, marked "1536 R"	1,536.055
Crook's house, $\frac{1}{4}$ mile north of, on right bank of small creek; pine tree, nail in foot of	1,536.64
John Miles's house; cottonwood tree, nail in root of	1,596.97
John Miles's house, 1 mile north of, east of trail; oak tree 6 inches in diameter, nail in root of	1,639.80
Modin's house; nail in top of sill	1,698.82
Modin's, $\frac{1}{2}$ mile east of, on trail, near falls; oak tree, nail in foot of . . .	2,148.67
Bagley Flat, 25 feet north of cabin; oak tree, nail in root of	2,737.87
Bagley Flat, 135 feet southwest of cabin, 85 feet southwest of head of spring; iron post, marked "2730 R"	2,730.216

POINT OF SOUTHERN PACIFIC RAILROAD, UP MIDDLE SALT CREEK.

	Feet.
T. 36 N., R. 4 W., sec. 30, $3\frac{1}{2}$ feet west of southeast corner of, on line between townships 35 and 36 N., R. 4 W., Mount Diablo meridian; iron post, marked "1182 R"	1,182.374

The bench marks described below were based on the levels of the McCloud River Ditch, furnished by J. R. Rodgers, engineer in charge, proper correction having been applied:

McCloud River, United States fishery reservation, northwest corner of; being also T. 34 N., R. 4 W., sec. 23, northwest corner of; 5 feet southeast of; 30 feet west of county road; iron post, marked "856 R"	856.156
McCloud River, on west bank: near head of Rodgers Ditch line, and 100 feet west of ditch station 71+50; 146 feet west of 10-inch forked live oak tree on edge of river, on line between townships 35 and 36 N., R. 3 W.; iron post, marked "1060 R"	1,059.986

OREGON.

BAKER, UNION, AND GRANT COUNTIES.

SUMPTER AND BAKER CITY QUADRANGLES.

The elevations in the following list are a continuation of those published in the Appendix to the Twenty-first Annual Report, page 564, being based on a bronze tablet in the astronomical pier in front yard of the public school in Baker City, stamped "3433 A," the elevation of which was accepted as 3,432.700 feet above sea level, as derived by double-rodged line from Astoria.

The leveling was done partly in 1899 by Mr. W. R. Manning, under the direction of Mr. R. H. McKee, topographer, and partly in 1900, by Mr. C. L. Nelson, under the direction of Mr. L. C. Fletcher, topographer.

All bench marks depending on this datum which are stamped with the letters "B. C.," in addition to figures of elevation, are referred to the old railway elevation accepted in 1898 for the Baker City bench mark and are stamped about 14 feet too high, but those stamped with the letter "A," in addition to the figures of elevation, are referred to Astoria and are generally stamped correctly.

CALIFORNIA GULCH, VIA SUMPTER VALLEY RAILROAD, TO M'EWEN.

	Feet.
California Gulch, 1.6 miles west of, opposite junction of small creek from south with Powder River; top of rail	3,926
California Gulch, 2.3 miles west of, opposite house 300 feet north of track; top of rail	3,951.4
California Gulch, 3 miles west of, at east end of switch; top of rail ...	3,967.1
Deer Creek, $\frac{3}{4}$ mile east of bridge over, opposite house 100 feet north of track; top of rail	3,990.4
Deer Creek, east of bridge, at switch for spur; top of rail	4,021.7
Deer Creek, north side of bridge over; top of rail	4,022.9
Deer Creek, 1 mile west of bridge over, opposite blue house, 200 feet north of track; top of rail	4,041.1
Stoddard's Mill, $\frac{1}{2}$ mile east of fork road to, opposite water tank; top of rail	4,058

Feet.

Stoddard's Mill, $\frac{1}{4}$ mile east of fork road to, south side of road; ground opposite schoolhouse	4,069
McEwen, opposite depot; top of rail	4,098.2
McEwen, 0.6 mile west of post-office, north of road, at fork road to Prairie City; iron post, marked "4168 B. C."	4,154.371

M'EWEEN, VIA PRAIRIE CITY ROAD, TO BURNT CABIN, 3 MILES EAST OF CLIFFORD.

Sumpter Valley Railroad crossing; top of rail, main track	4,130.4
Powder River, east side of bridge over; top of rail	4,115.4
T. 10 S., R. 37 E., sec. 10, $\frac{1}{4}$ miles west of corner of southeast corner of: floor of bridge over creek	4,204
Young's house, 1 mile southwest of, 20 feet north and 10 feet east of fork of road to Sumpter; iron post, marked "4356 B. C."	4,342.449
Summit of road, 5 feet east of; pine tree, nail in root of	5,094.24
Old stage station, Alder Springs: ground opposite house	4,659
Burnt cabin, $\frac{1}{4}$ mile east of, north of road; tree, nail in base of	4,266.29

BURNT CABIN, DOWN BURNT RIVER, TO HEREFORD.

Trout Creek, 200 feet northwest of, 5 feet east of road; top of bowlder ..	4,123.33
Trout Creek, 1 mile southeast of, 4 feet south of road, 150 feet east of bottom of hill: pine tree, nail in root of	4,272.51
Trout Creek, $2\frac{1}{4}$ miles southeast of, 40 feet north and 15 feet east of summit of road, in top of flat bowlder: bronze tablet, marked "4691 A." ..	4,690.840
King's house, $\frac{1}{2}$ mile north of, 12 feet northeast of road; in bowlder: copper bolt, marked "3946 A"	3,946.470
King's shop, 225 feet southeast of, 4 feet east of road; pine tree, nail in root of	3,940.01
Hardman's house, 175 feet southeast of, 25 feet south of gate, at road-side; iron post, marked "3908 A"	3,908.268
Fleetwood's log house, 600 feet west of, 10 feet south of road; at fence corner, pine stake	3,715.98
Fleetwood's house, 400 feet northwest of, north side of road; pine stake ..	3,678.70

M'EWEEN TO SUMPTER.

McEwen, 1 mile west of, at railroad switch crossing; top of rail	4,143.4
McEwen, $1\frac{1}{2}$ miles west of, at railroad switch crossing; top of rail	4,164.4
McEwen, $2\frac{1}{4}$ miles west of, railroad switch crossing; top of rail	4,211.4
Sumpter, 45 feet north of northeast corner of depot: iron post, marked "4429 B. C."	4,415.593

SUMPTER TO GRANITE,

Sumpter, $1\frac{1}{2}$ miles west of; 150 feet west of house and cabin. 6 feet south of road; pine tree, nail in base of	4,491.46
Sumpter, 3 miles west of; 150 feet southeast of bridge at forks of creek, 5 feet south of road; fir tree, nail in base of	4,541.80
Sumpter, $4\frac{1}{2}$ miles west of; 1,000 feet east of saloon, 10 feet northeast and 6 feet above road, in bowlder: tablet, marked "5325 A."	5,325.341
Summit of road, 30 feet northwest of; fir tree, nail in base of	5,790.4
Summit, 1 mile west of; 100 feet south and 12 feet west of forks of old and new roads; nail in stump	5,316.05

	Feet.
Summit, 3 miles west of; 40 feet south of culvert, 15 feet south of road; nail in small stump	4, 981.26
Gottrich House, 600 feet west of; 20 feet north of road; stump, nail in base of	4, 629.12
Granite, north side of Grand Hotel, 10 feet west of corner of steps; iron post, marked "4680 A"	4, 680.401

GRANITE TO RED BOY MINE.

Granite, 0.2 miles west of; at foot of sign board at forks of road toward Pendleton; stake, nail in top of	4, 599.38
Granite, 1.5 miles west of; 20 feet southeast of fork road to Red Roy mine; nail in stake	4, 485.06
Granite, 2 miles west of; 15 feet east of forks of road to Saunders Mill and Granite and Lawton; small stump, nail in top of	4, 481.22
Clear Creek; at fork of road to Granite, floor of bridge over	4, 518.9
Red Boy mine; west end of bridge over Clear Creek, in north side of timber supports; nail	4, 608.10
Red Boy mine; 450 feet northeast of stamp mill, 20 feet southwest of west end of Clear Creek bridge, 20 feet south of road; iron post, marked "4610 A"	4, 610.435

RED BOY MINE TO ROBINSONVILLE.

Red Boy mine, 2 miles south of; pine tree with "Lindsay & Wade 6 miles" sign, nail in base of	4, 781.65
Alamo; in front of stage office, stake, nail in top of	4, 870.29
Robinsonville, 0.8 mile north of; 300 feet north of cabin, 1 foot west of road; stump, nail in base of	6, 184.41
Robinsonville, 0.5 mile northwest of; at summit of road	6, 288.43

ROBINSONVILLE, VIA GEISER POSTOFFICE, TO CLIFFORD.

Robinsonville, 0.2 mile south of; 25 feet west of road at summit, in top of rock, 4 inches above ground; tablet, marked "6249 A"	6, 249.199
McDaniel's cabin, 200 feet west of; stump in road, nail in top of	5, 750.04
Robinsonville, 2 miles east of; in fork and 10 feet east of road; tamarack tree, nail in base of	5, 654.60
Bonanza mine, 0.8 mile west of; 450 feet west of cabins, 2 feet north of road; fir tree, nail in base of	5, 424.94
Geiser; 450 feet west of Bonanza mill concentrator, north of road; iron post, marked "5140 A"	5, 140.447
Clifford, 1½ miles west of; at summit of road	4, 838
Clifford; 100 feet north of house, 2 feet east of Bonanza road, in top of bowlder; bronze tablet, marked "4269 A"	4, 270.946

GRANITE, NORTH TOWARD PENDLETON AND TO TROUT CREEK MEADOWS.

Granite, 4¼ miles north of; 250 feet northeast of two new frame houses, 3 feet south of road; black pine tree, nail in base of	5, 463.60
Summit of road, 8 feet west of; 15 feet north of fork road to Monumental mine; iron post, marked "5666 A"	5, 666.654
Crane Flat; 15 feet east of forks of road; black pine tree 1 foot in diameter, nail in base of	5, 489.97
Crane Flat, 1 mile north of; 18 feet northwest of bridge over ditch; stump, nail in base of	5, 510.61

Feet.

North Fork of John Day River; 20 feet northeast of bridge over, 10 feet east of road; iron post, marked "5195 A"	5, 195.458
Trail Creek, 0.1 mile west of; 3 feet west of road, at sharp turn, pine tree, nail in base of	5, 268.17
Trout Creek: 2 feet east of fork road to; pine tree, nail in base of	5, 616.23
Trout Creek, $1\frac{1}{2}$ mile north of fork road to; 2 feet west of road, on hill-side: large pine tree, nail in base of	5, 971.87
Chicken Hill, 2 miles south of, 15 feet east of road near summit; 4-foot fir tree, nail in base of	6, 098.46
Chicken Hill, on county line, 10 feet west of road, 75 feet northeast of sheep corral; iron post, marked "5929 A"	5, 929.602
Trout Creek Meadow, 60 feet southeast of log house, 200 south of east fork of Trout Creek, 2 miles west of Pendleton road; iron post, marked "5401 A"	5, 401.491

NORTH FORK OF JOHN DAY RIVER.

North Fork of John Day River, 2.6 miles east of bridge over, at cabin; stump, nail in top of	5, 514.94
North Fork of John Day River, 4 miles east of bridge over, 30 feet north-east of ford, 5 feet southeast of road; iron post, marked "5497 A"	5, 497.428

CRANE FLATS TO MONUMENTAL MINE AND LAWTON TO SAUNDERS MILL.

Monumental mine, 50 feet northeast of hotel; iron post, marked "6352 A"	6, 352.540
Lawton, 1 mile northwest of, 50 feet east of bridge over Three Cent Creek, 250 feet southeast of Saunders Mill; iron post, marked "4443 A"	4, 443.500

SUMPTER TO BOURNE.

Sumpter, $\frac{3}{4}$ mile north of; floor of bridge over Cracker Creek	4, 457
Sumpter, $1\frac{1}{2}$ miles north of; floor of east end of bridge over Cracker Creek	4, 531
Sumpter, 2 miles north of; floor of east end of bridge over Cracker Creek	4, 562
Sumpter, $2\frac{1}{4}$ miles north of; floor at south end of bridge over Cracker Creek	4, 595
Pole Creek, floor of bridge over	4, 626
Sumpter, $2\frac{3}{4}$ miles north of; floor at north end of bridge over Cracker Creek	4, 641
Sumpter, $3\frac{1}{4}$ miles north of; floor at north end of bridge over Cracker Creek	4, 678
Wind Creek, floor of bridge	4, 705
Sumpter, $3\frac{3}{4}$ miles north of; floor of bridge over Cracker Creek	4, 774
Sumpter, 4 miles north of; floor of bridge over Cracker Creek	4, 794
Sumpter, $4\frac{1}{4}$ miles north of; floor of bridge over Cracker Creek	4, 826
Sumpter, $4\frac{3}{8}$ miles north of; floor of bridge over Cracker Creek	4, 864
Sumpter, $4\frac{5}{8}$ miles north of; floor of bridge over Cracker Creek	4, 915
Sumpter, $4\frac{7}{8}$ miles north of; floor of bridge over Cracker Creek	4, 957
Scarff's house, 50 feet northeast of; 15 feet north of Silver Creek road, in granite rock; aluminum tablet, marked "5013 B.C."	4, 999.368
North Pole Mining Company, opposite office; ground	5, 058
Bourne, 65 feet northeast of J. P. Fox's house, 20 feet west of Eureka and Excelsior mine; iron post, marked "5403 B.C."	5, 389.225

CLIFFORD, VIA AUSTIN, TO BURNT RIVER.

	Feet.
Clifford, 2½ miles southwest of; floor of bridge over North Fork of Burnt River	4,302.33
Clifford, 2½ miles southwest of; 15 feet north of road, 600 feet southwest of spring; pine tree, nail in base of	4,358.94
Clifford, 2½ miles southwest of; 250 yards west of bridge over North Fork of Burnt River, in top of large boulder; aluminum tablet, marked "4368 A."	4,369.810
Clifford, 5½ miles southwest of; 12 feet northwest of road, at southwest corner of small flat on summit, in top of large boulder; bronze tablet, marked "5107 A."	5,106.959
Austin, 2½ miles northeast of; at fork road to Robinsonville; ground ..	4,377
Summit of road between Blinn Station and Austin, 18 feet northwest of; yellow-pine tree, nail in base of	4,129.93
Austin, 30 feet west of store, 20 feet west of road, in top of large boulder; aluminum tablet, marked "4074 A."	4,073.944
Clear Creek, floor of bridge over	4,081
Clear Creek, 600 feet southeast of bridge over, 20 feet southwest of road; large pine tree, nail in base of	4,109.19
Middle Fork of John Day River, 420 feet west of bridge over, 6 feet north of road; large pine tree, nail in base of	4,349.95
Log house, 450 feet east of; 100 feet east of new log barn, 50 feet south of road, in top of large boulder; copper bolt, marked "4324 A."	4,325.554
Well's ranch, ½ mile southeast of; 5 feet east of road; large pine tree, nail in base of	4,150.78
Cheese ranch, ⅝ mile southeast of; 175 feet northeast of house, 1 foot east of road; nail in top of stake	3,930.24
McCullough's cabin, 300 feet north of; 4 feet west of road; nail in top of stake	3,932.53
McCullough's cabin, 300 feet southwest of; 150 feet west of road, 15 feet west of ditch, in top of boulder; aluminum tablet, marked "3951 A." ..	3,953.107
McCullough's cabin, ¾ mile east of; 600 feet west of frame house, at southwest corner of culvert over ditch; nail in top of stake	3,905.09

HAINES, TO ROCK CREEK SCHOOLHOUSE.

Rock Creek school, 150 feet southwest of; 250 feet west of road, T. 7 S., R. 38 E., 750 feet northwest of southeast corner of; iron post, marked "3446 A."	3,445.988
Rock Creek school, south of; at crossroads, T. 8 S., R. 38 E., 200 feet south and 20 feet west of northeast corner of; iron post, marked "3443"	3,443.056

WASHINGTON.

KITITAS AND YAKIMA COUNTIES.

MOUNT AIX QUADRANGLE.

The elevations in the following list are based primarily on an aluminum tablet on the southeast corner of the city hall in Tacoma, the elevation of which was accepted as 109.968 feet above mean sea level. From this bench mark a line of levels was carried along the Northern Pacific Railway and from this latter line a bench mark was established

at Mehaffey's ranch, the elevation of which was determined to be 2,138.754 feet. The elevations are based directly upon this bench mark.

The leveling was done under the general direction of Mr. A. H. Sylvester, topographer, by Mr. C. J. Hutchinson, levelman.

All bench marks are referred to Tacoma and are stamped with the letter "T" in addition to the figures of elevation.

MEHAFFEY'S RANCH, UP NACHES RIVER, TO MATHEW'S CABIN.

	Feet.
Mehaffey's house, 1,200 feet northwest of, north side of trail; large fir tree, nail in root of	2, 139. 15
Mehaffey's ranch, 1 mile northwest of, 3 feet north of trail, 25 feet north of Naches River bank, 150 feet southeast from where trail starts over mountain; cottonwood tree, nail in root of	2, 132. 05
Rock Creek, center of bridge over	2, 171
Rock Creek, 15 feet from northeast corner of bridge, 5 feet north of trail; pine tree, nail in root of	2, 169. 45
Rock Creek, 2,600 feet northwest from, 25 feet south of trail, 150 feet from Rock Creek summit; pine tree 30 inches in diameter, nail in root of	2, 319. 52
Rock Creek hill, 150 feet northwest of foot of, 400 feet east of large rock bluff, 45 feet north of trail; pine tree 30 inches in diameter, nail in root of	2, 180. 52
Hanging Rock cribbing, 100 feet west of, 3 feet north of trail; fir tree 24 inches in diameter, nail in root of	2, 199. 87
Hanging Rock cribbing, 2,800 feet west of: on west side of small gulch, 5 feet south of trail; pine tree 20 inches in diameter, nail in root of ..	2, 245. 24
Deserted cabin, 400 feet north of, 75 feet south of trail, about 150 feet from river, at foot of hill; 15-inch pine tree, nail in root of	2, 270. 60
Old cabin, 400 feet north of, 15 feet south of trail, 140 feet south of bluff; pine tree 24 inches in diameter, nail in root of	2, 311. 17
Old log cabin, 700 feet east of, 20 feet north of trail; pine tree 2 feet in diameter, nail in root of	2, 301. 20
Gold Creek, 100 feet east of crossing, 9 feet east of center of trail, in large flat rock: bronze tablet, marked "2437 T"	2, 437. 241
Gulch, center of small bridge over; 150 feet north of river	2, 400
Small branch of river, 350 east of, 500 feet west of small bridge; 3 feet north of trail, at foot of hill: pine tree 14 inches in diameter, nail in root of	2, 347. 57
Small branch of river, 45 feet east of northeast corner of cribbing over, several hundred feet from mouth, 10 feet north of trail; small double cottonwood tree, nail in root of	2, 362. 98
Small branch of river, 2,500 feet northwest of cribbing over, 5 feet north of trail, 50 feet from river bank; at foot of fir tree, nail in hub ..	2, 398. 6
Two small spring branches, 100 feet west of first, and 30 feet east of second, south side of trail; pine tree 24 inches in diameter, nail in root of	2, 461. 98
Waterfall at foot of hill, 200 feet west of, 5 feet south of trail; pine tree 18 inches in diameter, nail in root of	2, 412. 82
Old cabin, 48 feet southwest from southwest corner of; 5 feet south of trail, 40 feet north of river bank; pine tree 12 inches in diameter, nail in root of	2, 449. 69

	Feet.
Long rock slide, 15 feet east of where trail starts over, south side of trail; at foot of willow tree 10 inches in diameter, nail in hub	2,462.92
Open flat 200 by 60 feet, 15 feet north of river bank, 15 feet north of trail, which runs along edge of water for 100 feet; pine tree 18 inches in diameter, nail in root of	2,470.34
Small island opposite head of, 90 feet south of foot of mountains, 20 feet south of trail, 5 feet north of river bank; fir tree 30 inches in diameter, nail in root of	2,482.74
Mill Creek, east of, 100 feet south of where trail starts over mountain, 40 feet from river bank; pine tree 30 inches in diameter, nail in root of ..	2,516.33
Bumping River, 800 feet above mouth, 90 feet northeast from where Bumping River trail crosses Naches River, 10 feet north of the trail, 80 feet north of the north edge of Naches River; iron post, marked "2557 T"	2,556.948
Bumping River, $\frac{3}{8}$ mile northwest of mouth of, 25 feet north Naches River trail, 75 feet east from where it starts over mountain, 35 feet north of river bank; pine tree 12 inches in diameter, nail in root of ..	2,578.6
Naches River, on north bank at first crossing, at foot of high rock bluff where there is a steep rock bank about 7 feet high for 150 feet; on point of rock	2,616.22
Bumping River, $2\frac{1}{4}$ miles northwest of mouth of, 250 feet north of river, 100 feet west of small spring branch, on Naches River trail, 300 feet west of mountain, and 300 feet east of where trail starts over another mountain, on circular flat about 400 feet wide; pine tree 16 inches in diameter, nail in root of	2,650.13
Bumping River, $3\frac{1}{2}$ miles northwest of, 40 feet north of river, 450 feet west of second mountain from Bumping River, 10 feet south of trail on big flat; pine tree 24 inches in diameter, nail in root of	2,672.97
Crow Creek, opposite mouth of; point of rock	2,701.
Crow Creek, $\frac{1}{4}$ mile northwest of mouth, west bank of Quartz Creek, 25 feet south of trail; pine tree 30 inches in diameter, nail in root of	2,717.34
Crow Creek, 2 miles northwest of mouth, south bank of river at first trail crossing, 900 feet east of second trail crossing; cottonwood stump 30 inches in diameter, nail in root of	2,805.40
Mathews cabin, 1 mile east of; on summit of mountain, on trail $\frac{1}{2}$ mile west of where it leaves river; iron post, marked "3119 T."	3,118.630
Mathews cabin, 65 feet west of southwest corner of; $\frac{1}{4}$ mile east of another cabin in edge of timber, on open flat of about 15 acres; pine tree 10 inches in diameter, nail in root of	3,049.54
Mathews cabin, $\frac{1}{2}$ mile west of; on north bank of river at trail crossing; pine tree 30 inches in diameter, nail in root of	3,068.87

MOUTH OF BUMPING RIVER, VIA AMERICAN RIVER TRAIL, TO GOLD HILL.

Naches River crossing, 1 mile west of: 100 feet north of bank of Bumping River, 50 feet south of foot of mountain, at west end of rock slide; fir tree 15 inches in diameter, nail in root of	2,600.61
Bumping River, $2\frac{3}{4}$ miles west of mouth, on flat at west side of Dead Horse Hill, 225 feet north of Bumping River, 10 feet north of trail; pine tree 48 inches in diameter, nail in root of	2,684.30
American River, 200 feet north of north bank of; 10 feet north of trail; fir tree 15 inches in diameter, nail in root of	2,746.47
American River, 250 feet north of and $1\frac{1}{2}$ miles northwest of mouth, 4 feet north of trail; pine tree 30 inches in diameter, nail in root of	2,841.71

	Feet.
American River, 2 miles northwest of mouth, 5 feet south of trail where it leaves river bottom and runs over bench; fir tree 24 inches in diameter, nail in root of	2, 894.52
American River, 2½ miles northwest of mouth, 25 feet north of bank, 4 feet north of trail where it runs over hill, in flat rock 4 by 12.5 by 9.5 feet; bronze tablet, marked "2937 T."	2, 936.676
American River, 4 miles west of mouth, south side of trail; fir tree 15 inches in diameter, nail in root of	3, 185.26
American River, 20 feet east of bank at Hells crossing, 150 feet east of east end of Devil's slide, 150 feet from forks of trail, and 10 feet south of left-hand trail; fir tree 15 inches in diameter, nail in root of	3, 237.49
Hells crossing of American River, 4,550 feet west of; at point where new trail joins old trail; bull pine 12 inches in diameter, nail in root of ...	3, 281.06
Dog Salmon Camp, 100 feet north of river, 3 feet south of trail; fir tree 40 inches in diameter, nail in root of	3, 302.85
Dog Salmon Camp, about 1 mile west of; 8 feet south of trail; pine tree 15 inches in diameter, nail in root of	3, 273.23
Pleasant Prairie, 20 feet north of northeast corner of old cabin, 54 feet south of trail, 54 feet north of American River, 8 feet west of flag pole; iron post, marked "3337 T."	3, 336.572
Pleasant Prairie cabin, 1,000 feet west of; at Dry Creek, 75 feet north of American River	3, 346
Pleasant Prairie cabin, 1½ miles west of, 200 feet east of west end of open flat, 12 feet south of trail; pine tree 10 inches in diameter, nail in root of	3, 363.33
Union Creek, 6 feet north of trail at crossing; pine tree 15 inches in diameter, nail in root of	3, 406.817
Union Creek, 1 mile west of; 3 feet south of trail; fir tree 10 inches in diameter, nail in root of	3, 683.22
Union Creek, 2¼ miles west of; south side of trail; fir tree 18 inches in diameter, nail in root of	3, 644.87
Union Creek, 3½ miles west of; 3 feet south of trail; pine tree 24 inches in diameter, nail in root of	3, 687.21
Morse Creek, 400 feet north of; 50 feet southwest of southwest corner of Hans Paulson's cabin, 300 feet south of trail; pine tree 40 inches in diameter, nail in root of	4, 186.69
Gold Hill; at northeast corner of Armstrong & Lull's cabin	4, 626
Bear Gap, summit of Cascades, 600 feet east of, ¾ mile west of Bob Fife's cabin, 20 feet south of trail; fir tree 30 inches in diameter, nail in root of	5, 600.58
Bear Gap, summit of Cascade Mountains, 10 feet east of Buckley trail; iron post, marked "5882 T."	5, 881.871
Bear Gap, ½ mile west of, south side of Forrest & Farrell's cabin "Tim Town," on Buckley trail; pine tree 18 inches in diameter, root of	5, 372.14
Bear Gap, 1½ miles northwest of, 600 feet northwest of second creek crossing, 100 feet west of trail; in large rock; bronze tablet, marked "4518 T."	4, 518.195

MOUTH OF AMERICAN RIVER TO BUMPING LAKE.

Bumping River, 125 feet southeast of American River trail crossing; hub	2, 773
Bumping River, ¾ mile southwest of trail crossing American River, 30 feet south of trail, 30 feet north of Bumping River; fir tree 10 inches in diameter, nail in root of	2, 770.04

	Feet.
Bumping River, $2\frac{1}{4}$ miles southwest of trail crossing American River, 150 feet north of north bank of Bumping River, 700 feet south of trail; fir tree 24 inches in diameter, nail in root of.....	2,858.87
Soda Springs, 350 feet north of; south side of river, 3 feet north of trail; fir tree 15 inches in diameter, nail in root of.....	3,018.36
Soda Springs, 1 mile southwest of; south side of trail; fir tree 36 inches in diameter, nail in root of.....	3,107.86
Soda Springs, $1\frac{1}{2}$ miles southwest of; 6 feet north of trail, 60 feet north of river bank; pine tree 24 inches in diameter. nail in root of.....	3,128.41
Goose Prairie cabin, $\frac{2}{3}$ mile northeast of; 20 feet south of trail, 20 feet north of river bank, west end of rock slide; fir tree 12 inches in diameter, nail in root of.....	3,193.06
Goose Prairie cabin, northeast corner of; 260 feet south of trail, 280 feet north of river, 500 feet east of old man Fife's grave; iron post, marked "3265 T.".....	3,265.498
Goose Prairie cabin, 5,800 feet southwest of; north side of trail; pine tree 9 inches in diameter, nail in root of.....	3,327.67
Goose Prairie cabin, $2\frac{1}{2}$ miles southwest of; 6 feet north of trail; fir tree 24 inches in diameter, nail in root of.....	3,410.94
Bumping Lake, 120 feet northeast of lower end of, at head of Bumping River, 10 feet north of trail, 30 feet north of old fence; iron post, marked "3407 T.".....	3,407.426
Bumping Lake, surface of, September 12, 1900.....	3,395

CHELAN COUNTY.

LEAVENWORTH QUADRANGLE.

The elevations in the following list are based primarily on an aluminum tablet on the southeast corner of the city hall in Tacoma, the elevation of which was accepted as 109.968 feet above mean sea level. From this bench mark a line of levels was carried along the Northern Pacific Railway to Clealum, and thence across country to the line of the Great Northern Railway. The levels herein referred to are based on bench marks established as above at Mission and Leavenworth.

The leveling was done under the general direction of Mr. R. A. Farmer, topographer, by Mr. E. M. Fry, levelman.

All bench marks are referred to Tacoma, and are stamped with the letter "T" in addition to the figures of elevation.

MISSION, VIA BRENNER CANYON AND CAMAS CREEK, TO PESHASTIN CREEK.

	Feet.
Mission, 150 feet southwest of depot, 100 feet south of railroad water tank.....	796.73
Mission Creek, floor of bridge over.....	813
Mission, $1\frac{1}{2}$ miles southwest of; T. 23 N., R. 18 E., sec. 5; 100 feet northeast of $\frac{1}{4}$ corner, between west side of; at corner of fence, nail in stake.....	887.56
District schoolhouse, southwest corner of; nail in sill.....	958.46
Mission, 3 miles west of, 100 feet south of $\frac{1}{4}$ section corner; tree at north side of road, nail in root of.....	1,070.89
Loudenbach's ranch, 500 feet east of house; on north side of road, top of stone.....	1,129.05
Robinson & Bluett's sawmill, $\frac{1}{4}$ mile east of; 6 feet north of road at summit of divide between Brender Canyon and Camas Creek; iron post, marked "3029 T".....	3,028.433

	Feet.
Robinson & Bluett's sawmill, 1½ miles west of; 100 feet south of road, top of boulder.....	2,507.66
Robinson & Bluett's sawmill, 2 miles west of; at south side of road, top of stone.....	2,196.69
Camas Creek, 1 mile east of mouth of; tree 10 feet north of road, nail in root of.....	1,897.70
Peshastin Creek, 5 miles south of mouth of; at intersection of road up Peshastin and road up Camas creeks; iron post, marked "1507 T"....	1,506.296

MOUTH OF EAGLE CREEK TO SUMMIT OF DIVIDE BETWEEN EAGLE AND CHUMSTICK CREEKS.

Freund's ranch, 1 mile east of, and 600 feet north of Eagle Creek; pine tree 10 feet south of road, nail in root of.....	1,316.91
Bellvel ranch, 10 feet south of large gate at west entrance, 2 feet from fence, 10 feet south of road; iron post, marked "1360 T".....	1,959.784
Halland's ranch, at northeast corner of barn; nail in corner of sill....	1,464.74
Kinney's ranch, ¼ mile north of, 300 feet north of Eagle Creek; top of large boulder 100 feet south of road.....	1,721.34
Smith's ranch, 1,000 feet west of house, 50 feet west of large entrance gate and 200 feet southwest of barn; iron post, marked "1984 T"....	1,984.001
Smith's ranch, 1 mile north of, 50 feet west of trail and 50 feet east of creek.....	2,155.39
Smith's ranch, 2 miles north of, 1,000 feet north of mouth of canyon No. 1, 100 feet west of trail; top of large boulder.....	2,257.58
Smith's ranch, 3 miles north of; 10 feet south of trail and 300 feet east of creek; burnt pine tree, nail in root of.....	2,422.53
Smith's ranch, 5 miles north of; 10 feet east of trail, 100 feet east of creek; fir tree, nail in root of.....	2,953.13
Chumstick Canyon; on summit of divide between Eagle and Chumstick creeks, at root of pine tree; aluminum tablet, marked "3270 T"....	3,270.314

NORTHUP RANCH, VIA CHUMSTICK CANYON, TO SUMMIT BETWEEN EAGLE AND CHUMSTICK CREEKS.

Northup ranch, 1 mile east of; north side of trail; top of stone.....	1,825.10
Second Creek, mouth of; water surface.....	1,810
Northup ranch, 2½ miles east of; 20 feet east of trail at mouth of first canyon; pine tree, nail in root of.....	1,935.26
Crummel's cabin, ¼ mile north of; north side of trail, top of boulder....	2,143.52
North Creek; at trail crossing, water surface.....	1,980
Chumstick Creek, north fork of; at trail crossing.....	2,290
Crummel's cabin, 1½ miles north of; at mouth of creek running southwest, water surface.....	2,377

UP STROMBERG'S CANYON, TO DIVIDE BETWEEN STRAWBERRY CREEK AND WENACHE RIVER.

Stromberg's ranch; at northeast corner of porch to house, stone.....	1,383.67
Stromberg's Canyon, ⅓ mile east of summit, on north side of and 150 feet west from mouth of; in large boulder; aluminum tablet, marked "1767 T".....	1,767.543

CHUMSTICK SCHOOLHOUSE, AT MOUTH OF SCHOOLHOUSE CANYON, VIA OLD ROAD, TO CHIWAUKUM.

Chumstick schoolhouse, 800 feet east of; at forks of road; iron post, marked "1631 T".....	1,631.307
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	Feet.
Chumstick schoolhouse, 2 miles west of, at summit between Schoolhouse Canyon and Wenache River, at north side of road; pine tree, nail in root of	2, 115.62
Wenache River, 150 feet west of cabin; in southwest corner of old bridge abutment on east bank; nail	1, 752.86
Old Bridge Ford, 2 miles south of; 50 feet east of road at clearing: fir tree, nail in root of	1, 729.39
Allen ranch, 150 feet south of southeast fence corner, 10 feet east of road, 300 feet west of Wenache River; pine tree, nail in root of	1, 716.12
Wenache River, 300 feet west of, at south end of rock slide, 10 feet east of road; pine tree, nail in root of	1, 749.39
Chiwaukum Creek: at north end of bridge	1, 687
Milepost 1683; nail in top of south post of rail rack	1, 727.64

CHIWAUKUM, UP CHIWAUKUM CREEK, TO BROWN BEAR MINING CAMP.

Chiwaukum Creek, left bank of, 10 feet south of trail; small cherry tree, nail in root of	1, 971.44
Chiwaukum Creek, 2 miles south of station, 500 feet north of old miner's cabin, 10 feet east of trail; pine tree, nail in root of	2, 129.71
Brown Bear mine, 250 feet north of; 300 feet northwest of falls of Chiwaukum Creek, 10 feet north of trail, and 100 feet north of creek; iron post, marked "2374 T"	2, 374.256

CHIWAUKUM SUMMIT, ON GREAT NORTHERN RAILROAD, TO FOOT OF WENACHE LAKE.

Dillon's ranch, $\frac{1}{2}$ mile north of; 10 feet north of forks of Nason Creek and Wenache Lake roads; pine tree, nail in root of	1, 993.42
Nason Creek, 150 feet southwest of; on right bank of ford, 10 feet west of road; nail in top of stump	1, 941.66
Thompson's ranch; 150 feet northeast of barn, 10 feet east of road; pine tree, nail in root of	1, 921.36
Wenache Lake, 2 miles southwest of; 10 feet west of road; sawed stump, nail in top of	1, 958.39
Wenache Lake; at steamboat landing, 1,000 feet south of ford, at head of Wenache River, 10 feet north of road; pine tree, nail in root of	1, 936.40
Wenache Lake, $\frac{1}{2}$ mile southeast of foot of; 5 feet east of junction of Leavenworth and Chiwaukum roads; pine tree, nail in root of	1, 941.06
Chumstick Creek, bridge over	1, 126
Frank's ranch; 600 feet south of house, 5 feet east of road; pine tree, nail in root of	1, 188.47
Freund's ranch; 1,000 feet east of house, 1,000 feet north of mouth of Eagle Creek, at north side of road; nail in stump	1, 240.09
Stromberg Canyon, mouth of, 200 feet south of intersection of Chumstick and Stromberg Canyon roads and 20 feet east of road; pine tree, nail in root of	1, 323.89
Trask ranch, 1 mile south of; 5 feet south of road; pine tree, nail in root of	1, 410.96
Trask ranch, 200 feet east of house, 50 feet west of road; pine tree, nail in root of	1, 443.23
Chumstick Creek, bridge over	1, 480
Chumstick schoolhouse, 1 mile south of; 10 feet east of road; 3-foot stump, nail in top of	1, 570.83

	Feet.
Chumstick schoolhouse, 1,000 feet east of; 10 feet east of road; 4-foot stump, nail in top of	1,625.26
Northup ranch, 1,000 feet west of house, 10 feet east of road; pine stump, nail in root of	1,728.64
Chumstick Canyon, mouth of; 5 feet east of trail and 500 feet southeast of road; stump, nail in top of	1,733.20
Northup ranch, 1 mile north of; 10 feet east of road; pine tree, nail in root of	1,817.83
Northup ranch, 2 miles north of; 3 feet west of road; pine tree, nail in root of	1,917.08
Northup ranch, 3 miles north of; 3 feet west of road; pine tree, nail in root of	2,182.55
Sunmit between Chumstick Creek and Chiwawa Valley; east side of road; stone, nail in top of	2,294.01
Burgess's ranch; 300 feet southwest of house at gate, 5 feet west of fence, 150 feet south of Beaver Creek Bridge; iron post, marked "1882 T"	1,181.61
Burgess ranch, 1 mile northeast of, 5 feet north of road and 500 feet east of creek; pine tree, nail in root of	1,993.17
Sugart's ranch, 100 feet north of barn, 10 feet west of elevated hay tram; 5-foot sawed stump, nail in center of	2,003.24
Haik's ranch, 300 feet southwest of house, east side of road; top of boulder	2,013.82
Chiwawa River, water level	1,940
Coal mines, 500 feet north of shaft house, 10 feet south of road; pine tree, nail in root of	2,008.403
Chiwawa River, 1 mile north of ford, 10 feet east of road; pine tree, nail in root of	1,941.33
Wenache Lake, 2 miles south of foot, 10 feet west of road; pine tree, nail in root of	1,947.46

FOOT OF WENACHE LAKE TO POINT 4 MILES UP WHITE RIVER.

Wenache River, 500 feet southeast of bank at foot of, at old steamer landing, 150 feet east of Wenache River, 150 feet north of old log shack; iron post, marked "1880 T."	1,879.778
Lake Wenache, foot of, water level 8.30 a. m., August 20, 1900	1,870
Wenache Lake, northeast bank of, 15 feet from water's edge, at Bear Point; top of large boulder	1,872.77
Barnard's ranch; 300 feet north of house, 100 feet from east bank of Lake Wenache at beach 2 miles south of head of; lone pine tree, nail in root of	1,875.64
Bates ranch, 150 feet southwest of house, 5 feet inside of fence, 50 feet from lake bank at head; iron post, marked "1873 T."	1,873.462
Wenache Lake, at head; water level, 3 p. m., August 20, 1900	1,869.73
Bates ranch, 2 miles north of, 50 feet east of trail, 75 feet southeast of log cabin; stump, nail in top of	1,919.31
Bates ranch, 3 miles north of, 5 feet west of trail, 200 feet east of river; sawed stump, nail in top of	1,896.40
Bates ranch, 4 miles north of, 5 feet east of trail up White River, 300 feet north of third bend in river; iron post, marked "1905 T."	1,905.333

SKAGIT AND WHATCOM COUNTIES.

The elevations in the following list are based on a bench mark established in 1898 at Marblemount, which in turn was based on a

bench mark of the United States Coast and Geodetic Survey at Tulalip. It was planned to continue these levels so as to form a connection with levels previously run from the east to Slate Creek Pass, but on account of deep snows a gap of about 8 miles was left uncompleted.

The leveling was done by Mr. E. M. Fry, levelman in charge. All bench marks dependent on this datum are stamped with the letters "TUL" in addition to the figures of elevation.

MARBLEMOUNT, VIA SKAGIT RIVER TRAIL, TO MOUTH OF SLATE CREEK.

	Feet.
Marblemount, $\frac{1}{2}$ mile west of, T. 35 N., R. 10 E., sec. 13, 300 feet northeast of northeast corner of; stump 30 inches in diameter, nail in	317.29
Marblemount, 200 feet west of hotel, at forks of road and trail; in stump 42 inches in diameter, top of nail	322.86
Marblemount, $1\frac{1}{2}$ miles northeast of, east side of trail; tree, nail in root of	329.20
Trudell's ranch, 300 feet north of house, 5 feet east of trail; sawed stump, nail in top of	342.58
Bacon Creek, 2 miles west of, 5 feet east of trail; cedar tree, nail in root of ..	340.15
Bacon Creek, water level	340
McAlister ranch, 5 feet north of entrance gate, 2 feet east of trail; fir tree, nail in root of	358.89
Petits ranch, 1 mile west of, south side of trail; top of large stone	381.72
Petits ranch, 1 mile east of, 150 feet north of Skagit River, 5 feet north of trail; cedar tree, nail in root of	414.03
Thornton's ranch, 3 miles west of, 5 feet south of trail, 250 feet north of cabin; large cedar tree, nail in root of	414.16
Thornton's ranch, 2 miles west of, 100 feet north of Skagit River, north side of trail, in large granite bluff; aluminum tablet, marked "425 TUL"	427.133
Thornton's ranch, 150 feet north of gate, 10 feet south of trail; cedar tree 24 inches in diameter, nail in root of	441.20
Dohn's ranch, 150 feet east of house, 5 feet north of trail; cedar tree, nail in root of	566.66
Goodell's, 100 feet east of clearing, 500 feet east of house, north side of trail; spruce tree, nail in root of	595.18
Goodell's, 1 mile east of, 5 feet north of trail; pine tree, nail in root of ..	619.39
Goodell's, 3 miles east of, 5 feet north of trail, $\frac{1}{4}$ mile east of old bridge over Skagit River; top of granite boulder	805.63
Davis ranch, 3 miles west of, 50 feet south of Hanging Rock camping place, 100 feet north of Skagit River, in slanting rock wall; aluminum tablet, marked "842 TUL"	843.943
Davis ranch, 2 miles west of, 50 feet north of shed and 100 feet north of river; fir tree, nail in root of	891.08
Davis ranch, or Cedar Bar Hotel, 100 feet north of house, 10 feet south of barn; large cedar tree, nail in root of	971.64
Cedar Bar Hotel, 1 mile east of, 5 feet north of trail; cedar stump, nail in top of	987.29
Deer Park, near southeast corner of house, 3 feet north of trail, 50 feet north of creek; top of stone in place	1,389.19
Sour Dough Mountain, 100 feet west of summit, north side of trail; on side of large boulder, center of chiseled cross	2,485.15
Trail, ground at summit	2,502

Feet.

Ruby Creek, $\frac{1}{2}$ mile west of mouth, at high bluff 800 feet north of river, 5 feet south of trail; fir tree, nail in root of.....	1,581.37
Skagit River, 1,000 feet above Ruby Creek. bridge over.....	1,374
Ruby Creek, mining camp at mouth of, 10 feet north of cook house, 20 feet east of blacksmith shop, in large boulder; aluminum tablet, marked "1372 TUL".....	1,374.426
Everet Hydraulic Company's plant, on roof of pressure box, top of sill.....	1,546.51
Upper Camp Everet Hydraulic Mining Company, 100 feet west of cook house, 10 feet south of flume, top of large stone bridge over Ruby Creek.....	1,562
Ruby Creek, 3 miles east of, $\frac{1}{2}$ mile west of Lone Tree Gulch, south side of trail; top of stone.....	1,999.62
Lone Tree Gulch, small bridge over west end of.....	1,972
Butchers cabin, front doorway, nail in sill of.....	1,775.83
Panther Creek, mouth of, water level.....	1,745
Nip and Tuck placer diggings, at north end of footbridge over Ruby Creek.....	1,864.60
Nip and Tuck placer diggings, 150 feet northeast of derrick shed, 150 feet northeast of bridge and 1,000 feet east of cabin; fir tree, nail in root of.....	1,867.82
Granite and Canyon creeks, junction of, water level.....	1,975
Canyon Creek, $\frac{1}{2}$ mile from mouth of, bridge over.....	1,983
Canyon Creek, 300 feet east of bridge over, $\frac{1}{2}$ mile from mouth of, on north side and 30 feet from creek, 400 feet north of house of Old Channel Hydraulic Company, in rock bluff; aluminum tablet, marked.....	1,991.015
Boulder Creek, 1 mile west of, 100 feet south of Canyon Creek, 200 feet northwest of cabin of Hydraulic Mining Company.....	2,198.78
Boulder Creek, mouth of.....	2,299
Mill Creek, mouth of, 200 feet northwest of cabin near, 250 feet north of Canyon Creek, in rock wall near old placer diggings; aluminum tab- let.....	2,530.870
Mill Creek, 1 mile east of mouth, east side of trail; top of stone.....	2,970.73
Canyon Creek, bridge over, $2\frac{1}{2}$ miles west of Slate Creek.....	2,744
Slate Creek, $2\frac{1}{2}$ miles west of mouth, 600 feet northeast of bridge over Canyon Creek, 10 feet east of trail; top of large boulder.....	2,751.37
Slate Creek, 1 mile west of, 10 feet east of trail; top of large stone.....	2,817.44
Slate Creek, 500 feet north of mouth of, 100 feet east of Smoky Cabin, 100 feet east of trail, in large boulder in place; aluminum tablet.....	2,929.16

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